ABRAHAM LINCOLN BIRTHPLACE MEMORIAL BUILDING

HISTORIC STRUCTURE REPORT

Cultural Resources, Southeast Region
National Park Service

January 2001

Cultural Resources
Southeast Region
National Park Service
100 Alabama St. SW
Atlanta, GA 30303
(404) 562-3117

2001
Historic Structure Report
Abraham Lincoln Birthplace Memorial Building
Hodgenville, Kentucky
LCS#: 00002

Previous page, Abraham Lincoln Birthplace National Historic Site, south elevation of Memorial Building. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

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APPENDICES continued

Project Team

Project Manager:	**Danny Scheidt**, Historical Architect National Park Service Southeast Regional Office Atlanta, GA
Document Publication/ Intranet Access:	**Jon Buono**, Historical Architect National Park Service Southeast Regional Office Atlanta, GA
Program Reviews:	**Bob Blythe**, History **Allen Bohnert**, Curatorial & Museum Services **Lucy Lawliss**, Historical Landscape Architecture **Danny Scheidt**, Historical Architecture National Park Service Southeast Regional Office Atlanta, GA
Materials Analysis:	**Sarah Chase**, Preservation Consultant Lexington, MA
Specialized Investigators:	**Steve Sherwood**, Mechanical Engineer National Park Service Southeast Regional Office Atlanta, GA **William Russell**, Structural Engineer Atlanta, GA

Executive Summary

The Abraham Lincoln Birthplace Memorial Building was constructed between 1909 and 1911 by the Lincoln Farm Association. Following donation in 1916, the memorial was managed by the War Department until 1933, and then acquired by the National Park Service in 1933. The park was designated a National Historic Site in 1959. As the 100th anniversary of the Memorial Building approaches, it remains in good condition overall.

SITE/LANDSCAPE

The memorial landscape is considered to be all the land on the west side of the park that constitutes the original Lincoln Farm Association (LFA) purchase, plus the additional land that was purchased to protect the boundary oak. Because of the length of time associated with the development of this area, as well as the irreversible changes to the original landscape, rehabilitation of the overall memorial landscape is the recommended treatment approach. However, within the zone immediately around the Pope Memorial Building, limited restoration

of the Pope landscape is recommended. Consult the Cultural Landscape Report (CLR) for detailed provisions.

MEMORIAL BUILDING

The present condition of the Abraham Lincoln Memorial Building reflects the changes accrued over its ninety-year history. Efforts to regulate the building's interior environment have yielded solutions which today seem inappropriate in juxtaposition with the historic fabric. The total effect of these alterations is a less appealing experience of the traditional Lincoln birthplace. As one approaches the building, their focal point is no longer the monumental bronze doors, but rather the glare of a reflective glass entrance unit. Once inside, the presence of this rose-tinted glass, along with the stark and unnatural quality of fluorescent light, creates a blur of reflective patterns and obscures the cabin's relation to the original property. From the Memorial's specific use of glazing it is clear that the building was not conceived to block out natural phenomena such as sun and shade, but rather to monumentally envelope what was once the domestic scene of Lincoln. When entering the Memorial, visitors should not feel that they are in a hermetic environment, but rather, witnessing an isolated moment in time, now bracketed by stone and glass.

Ultimate treatment for the Abraham Lincoln Birthplace Memorial Building should be restoration to the 1909-1911 historic period. This period of significance includes the American Public Memorial and the Design and Construction of the Lincoln Birthplace Memorial.

To restore the building to this period, the following will be required:

1. Restore skylight and remove wood-framed drop ceiling. Remove non-historic corrugated acrylic panels from historic copper ceiling grid and replace with flat, frosted panels, similar to original glass.
2. Remove non-historic aluminum door systems at both entrances.
3. Remove non-historic solar film from glass.
4. Restore plaster profile on interior walls.
5. Paint plaster interior per historic period 1909 - ca1933.
6. Compose and install 4 marble plaques on north wall, according to guidelines initiated in 1959.
7. Redefine engraved text on exterior granite panels flanking the front (south) entrance.
8. Remove simulated clay floor in cabin and resurface concrete floor per historic period 1909 - ca1911.
9. Remove or redesign ranger desk to minimize adverse visual impact to historic interior.

The previous conditions are detailed as follows:

Skylight

The original roof-level pavement lights were enclosed under a metal framework of wire glass, sometime between 1929 and 1959. In 1959, the skylight was rendered inoperable by the construction of a wood-framed drop ceiling which houses 15 fluorescent lights. The original glass panes of the copper ceiling light were replaced with the present acrylic panels. The panels should be replaced with a material to resemble the

original frosted glass, with appropriate ultraviolet filtration and thickness capable of spanning the mullion. The plenum and florescent lights should be removed, and the skylight repaired, allowing the room to be naturally illuminated. Fluorescent or spot lights should be mounted along the walls above the rooflight to provide a secondary light source for cloudy days and evening illumination.

Doors

The present aluminum-framed doors were added to the building in 1971 presumably to offset use of the large original bronze doors and to better regulate environmental conditions. In review, we feel that their implementation is not sensitive to the overall design of the Memorial or to the processional experience. Problems include: disproportionate handles, visually obstructive aluminum frame, and the imposition of a transom window against the ornate bronze doors. Ideally, we would recommend a return to the use of the original doors. Due to their cumbersome weight, this option is not practical for the accessibility of many visitors. We instead recommend replacement of the two aluminum entrance units with a total glass system and a restoration of the bronze finish on the original doors. A total glass system constructed of tempered glass panes would satisfy the same requirements as the aluminum doors, but would have a minimal effect on the building's appearance.

Tinted Glass

The tinting done in 1992 was specified to reduce ultraviolet light levels in the Memorial interior, thereby better preserving the cabin. This justification differs from that stated in the Long Range Interpretive Plan synopsis (April 1999), which cites the film as reducing glare for visually impaired visitors. Once the objective of controlling the light conditions is understood, an effort should be made to find a more appropriate solution. Advances in ultraviolet protection have produced clear films which would neither taint the quality of light entering the Memorial, nor create reflected surfaces on the exterior.

Walls

The surface of the walls must be refinished to remove paint splatter and drip from decades of paint applications. This is especially problematic along the molding and other articulated surfaces like the ceiling rosettes. The walls were last repainted in 1992, and have been done so at a frequency of every 7 to 10 years. The recommendation calls for a return to the original earth-tone color scheme. (see Paint Study, Appendix G)

Plaques

The original Nancy Hanks and Tom Lincoln plaques were covered in 1941 due to reported historical inaccuracies in the presented information. In 1959 all four plaques were removed, as any rededication of the two biographical plaques was contingent on the content of the remaining two plaques. From studying the contemporary memorandums, it seems a solution which utilizes direct quotations instead of historical narratives would be most appropriate. These solutions were prepared by Lincoln scholars prior to the dedication of the visitor center, though never implemented.

In addition to removal of non-historic in-

trusions and the reinstallation of historic features, the following are required to insure preservation of the Memorial Building:

EXTERIOR ENVELOPE

1. Cleaning and restoring of historic exterior finished surfaces (granite, bronze, copper). The masonry was last repointed in 1985, and is typically done every 10 years.
2. Clean, refinish, and stabilize roof access ladder. Rust from the ladder has stained the granite surface of the Memorial. Consider redesign of harness system, possibly involving pulley. The ladder has been restricted since 1990 due to safety concerns.
3. Repair/repoint monumental stairs. Major repointing was last performed in 1990.
4. Repair broken copper mounting bracket at downspout on west elevation.

INTERIOR ENVELOPE

1. Clean and repolish marble surfaces.
2. Gently clean bronze wall grilles avoiding verdigris.

ROOF

1. Repair loose and open seams. Roofing consultant should be hired to evaluate condition of overall roofing system. Total replacement of roofing may be needed.
2. Repair and restore skylight according to provisions previously outlined.

UTILITIES

1. Redirect air flow from HVAC floor-mounted supply grille away from cabin to provide more even circulation. The present condition directs most of the refreshed air directly into the historic return grille mounted on the wall. (see Eubank's 1989 inspection, Appendix?)
2. As condensation continues to be a problem on windows and walls, consider installing Temperature Compensating Humidity Control (TCH). This device changes interior humidity levels according to outdoor temperature changes.

Administrative Data

LOCATIONAL DATA

Building Name: Abraham Lincoln Birthplace Memorial Building
Building Address: 2995 Lincoln Farm Road, Hodgenville, KY 42748
Park Orgcode: 5540
District Orgcode: 5540
Location: Center of western end of park
County: Larue

REAL PROPERTY INFORMATION

Acquisition Date: 1933
General Ledger Acct Mo: 215
Sf 1166 Number: 6070
Sf 1166 Designation: Visitor Contact
Total Improvement/: Modification Costs $140,163 (known)

NUMBERING INFORMATION:

LCS#: 00002

SIZE INFORMATION

Total Floor Area:	1772 SF
First Floor Area:	1772 SF
Additional Floor Area:	0 SF
Total Basement Area:	665 SF
Finished Basement Area:	665 SF
Unfinished Basement Area:	0 SF
Roof Area:	1740 SF
Perimeter Length:	170 LF
Number Of Stories:	1
Number Of Rooms:	1
Number Of Bathrooms:	0

BUILDING CODE INFORMATION

Applicable Codes:	NFPA 101, ANSI-All7.1
Occupancy Classification:	Assembly
Occupancy Load:	100
Hazard Of Contents:	Ordinary
Seismic Zone:	2
Construction Type:	Type 11

PROPOSED TREATMENT

RELATED STUDIES

CULTURAL RESOURCE DATA

National Historic Landmark:liste

National Register of Historic Places: list

Periods of Significance: National significance as Martin L

Historical Background & Context

INITIATION OF THE MEMORIAL

The Lincoln birthplace farm came to the attention of Robert Collier, publisher of *Collier's* magazine, in 1904, when he read a newspaper article describing its neglected condition. When the farm was placed at public sale in August 1905, Collier sent Richard Lloyd Jones, *Collier's* editor, to purchased the 110-acre property. In the February 10, 1906 issue of *Collier's*, Jones presented the plans of the newly-formed Lincoln Farm Association, whose Board of Trustees included a number of notable Americans, such as Samuel Gompers, William H. Taft, Samuel Clemens, William Jennings Bryan, Cardinal Gibbons the Archbishop of Baltimore, Ida Tarbell, and others. With headquarters in New York City, the association proposed to "make of Lincoln's humble birthplace a national shrine, and on the one hundredth anniversary of his birth to dedicate it to the American people as the abiding symbol of the opportunity with which democracy endows its men." The plans called for acquisition of the original birth cabin, cleaning and protection of the old spring, erection of a monument to Lincoln, construction of a historical museum, and better maintenance of the farm.

Earlier efforts to commemorate the site of Lincoln's home for the first two and a half years of his life had failed. Attempts by private parties and owners of the property to erect a monument or to persuade the state or federal government to purchase the farm were unsuccessful. The birth cabin itself was removed from the farm in 1861 and returned in 1895 in time for a nearby encampment of the Grand Army of the Republic. In 1897, the owner dismantled the cabin for exhibit at the Nashville Centennial, whereupon the logs made their way around the country to various expositions until the Lincoln Farm Association discovered them in a basement in Long Island and purchased them. The authenticity of the birth cabin has been questioned because of its extensive travels and the replacement of many of the logs during dismantling and reconstruction for display. Investigations by the National Park Service and others uncovered no conclusive proof of the logs' origin, and the cabin is now referred to as Lincoln's "traditional" birthplace.

The Lincoln Farm Association launched a fund-raising campaign in 1906 to carry out their plans for the Lincoln farm. The Association appealed to the general public, limiting donations to $25 for the first two years of the drive. The board eliminated the maximum limit in 1908 when they calculated that the fund-raising costs had totaled more than half the amount received. The less-than-successful fund drive prevented the Association from dedicating the Memorial Building in 1909, on the 100th anniversary of Lincoln's birth, as originally planned. Cornerstone ceremonies, however, were held on February 12, with President Theodore Roosevelt in attendance, as well as other dignitaries and nearly 8,000 visitors.

DESIGN

Noted landscape architects Jules Guerin and Guy Lowell visited the site in early 1907 to survey the grounds and make recommendations for improvements. In April 1907 the Lincoln Farm Association Executive Committee instructed trustee Thomas Hastings to select a group of architects to be invited to submit plans for a Lincoln memorial building design competition. In collaboration with architect Charles McKim, Hastings selected architect John Russell Pope.

Born in New York in 1874, John Russell Pope studied architecture under William R. Ware at Columbia University. He graduated in 1894, at which time he won two university awards, one to the American Academy in Rome and one for travel. During his two year sojourn through Italy and Greece, Pope made measured drawings of antique edifices. Late in 1896, Pope went to Paris, where he attended the Ecole des Beaux-Arts. He returned to New York in 1900 and established an office.

In June 1907 Pope visited the site to survey the grounds and draft working plans. Pope designed the memorial building fairly early in his career, and probably received the commission because of his association with McKim. Noted for his designs in the classical tradition, Pope's works included colleges, churches, hospitals, monuments, memorials, and private homes. Many of his well-known buildings, such as the Jefferson Memorial, the National Archives, and the Na-

tional Gallery of Art, are found in Washington, D.C. Pope's Pharmaceutical Institute building expanded upon design elements seen in the Lincoln Memorial Building. Pope's classically-inspired buildings are noted for their clear forms and grand spirit. Practicing until his death in 1937, Pope was the foremost inheritor of McKim's severe classicism. As a result, he earned the title "the last of the Romans."

CONTRACTOR & CONSTRUCTION

Five contractors submitted construction bids for building, terracing, and excavation for the memorial. The Norcross Brothers Company of Louisville was selected as primary contractor, with a bid of $237,101, and began work in November 1907. When the fund-raising efforts did not produce the anticipated amount of money and attempts to obtain funds from Congress failed, Pope's original plan, which called for placing the cabin in a central court with a movable roof and surrounded by museum halls, was simplified. Pope's associate, Edwin Robinson Will, supervised construction of the memorial building, designed the landscaping of the grounds, and oversaw completion of the details.

The Dodds Granite Company, from Milford, Massachusetts supplied their popular Stony Creek Milford Pink Granite, which was used on many public buildings in the era. The interior marble was quarried in Tennessee.

The cornerstone was laid February 12, 1909 and the building was completed in the fall of 1911. Missouri governor Joseph W. Polk, president of the Lincoln Farm Association, and President William Howard Taft addressed a crowd of 3,000 who attended the opening ceremonies.

STEWARDSHIP & ALTERATIONS

The Lincoln Farm Association maintained the memorial for five years. Congress voted in 1916 to accept donation of the Lincoln birthplace farm and its $50,000 endowment from the Lincoln Farm Association. According to the legislation, the property was "dedicated to the purpose of a National Park or reservation." The U.S. Department of War administered the property until 1933 when jurisdiction was transferred to the Department of the Interior, National Park Service, where it has remained since that time.

The War Department undertook a number of improvements to the building in 1929 and 1930 including: replacing the roof, constructing a pavilion directly behind the structure, adding a new restroom facility, and laying new steps and walks on the east and west sides. The restroom and pavilion buildings were demolished in 1959 when the new visitor center was constructed.

Originally on the interior of the Memorial Building, along the east and west walls, were four marble tablets, carved with various texts. Two of the marble tablets, one containing a description of Nancy Hanks Lincoln, the other describing Thomas Lincoln, were plastered over and painted in 1941 because of questions concerning the historical accuracy of their content. Subsequently, the two remaining tablets were removed in 1959.

It may be assumed that the plaques were an original component to the Memorial Building, as funded by the Lincoln Farm Association. At this time, the development of those inscriptions is not

known.

In 1936, Historian Alvin P. Stauffer writes memorandum noting inaccuracies in inscriptions and quotes for two plaques describing Lincoln's parents: one for Nancy Hanks and another for Thomas Lincoln.

In 1940, NPS Regional Historian Appleman prepares texts to replace tablets of Nancy Hanks and Thomas Lincoln. Four Lincoln experts dispute Appleman's newly composed texts without coming to a conclusion.

In 1941, the two plaques describing Lincoln's parents covered in plaster and painted. They were intended to be replaced after World War II.

In 1948, NPS Director Drury approves a recommendation to use excerpts from the Lincoln autobiography sent to Jesse W. Fell on December 20, 1859 as the replacement inscription for the plaques describing Lincoln's parents.

But Drury's recommendation was complicated by the fact that one of the remaining plaques already contained an excerpt from the Fell autobiography. In 1949, Superintendent Hoskins offered the following recommendation:

1. Remove plaque with excerpt from Lincoln's autobiography for Fell.
2. Use this space and the space formerly occupied by Thomas Lincoln plaque to give complete Fell autobiography.
3. Use space formerly occupied by Nancy Hanks plaque for information about Thomas Lincoln and Nancy Hanks.
4. The other plaque (containing inspirational passages) to remain as is.

These suggestions were further argued by the park and scholars.

In 1959, all four marble plaques were completely removed. Vacancies in the wall were filled with cement mortar and prepared for the application of plaster.

Also in that year, a wood-framed drop ceiling was placed over the skylight and fluorescent lights was added to artificially illuminate the cabin.

Original and Subsequent Owners

The following is an incomplete listing of the ownership of the Lincoln farm, taken from information in the National Park Service Administrative History:

December 12, 1808 - Isaac Bush to Thomas Lincoln
December 1816 - Court-ordered sale by commissioner to John Welsh
August 28, 1905 - Sale by commissioner to Robert J. Collier
June 19,1906 - Robert J. Collier to Lincoln Farm Association
July 18, 1916 - Lincoln Farm Association to U.S. Government

Chronology of Development and Use

LINCOLN FARM ASSOCIATION, 1911-1916

CONSTRUCTION DATE: 1909-1911
CONSTRUCTION: Built
TEXT: Built by Lincoln Farm Association

COST: $250,000
DESIGNER: John Russell Pope
DESIGNER'S OCCUPATION: Architect

WAR DEPARTMENT, 1916-1933

CONSTRUCTION DATE: 1927-1929
CONSTRUCTION: Rehabilitation
TEXT: Replace 3 glass windows

COST: $30
DESIGNER:
DESIGNER'S OCCUPATION: Day Labor

CONSTRUCTION DATE: 1929
CONSTRUCTION: Rehabilitation
TEXT: Painting interior

COST: $260
DESIGNER: S.T. Carroll
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1929
CONSTRUCTION: Preservation
TEXT: Resoldering of caps to ceiling steel work

COST: $20
DESIGNER: W. D. Durham
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1929
CONSTRUCTION: Rehabilitation
TEXT: Installation of new furnace & floor registers

COST: $458
DESIGNER: Stratton & Terstegge Co.
DESIGNER'S OCCUPATION: Contractor

* document located in Appendix I

CONSTRUCTION DATE: 1929
CONSTRUCTION: Rehabilitation
TEXT: Add roof slab over 1909 roof
(http://crs/historic/hsr/abli/pdf/draw_roof_29.pdf)
* drawings

COST: $unknown
DESIGNER:
DESIGNER'S OCCUPATION:

CONSTRUCTION DATE: 1929
CONSTRUCTION: Rehabilitation
TEXT: Repairs to roof

COST: $135
DESIGNER: W. D. Durham
DESIGNER'S OCCUPATION:
Contractor

NATIONAL PARK SERVICE, 1933-present

CONSTRUCTION DATE: 1941
CONSTRUCTION: Altered
TEXT: Plaster over two (2) marble plaques

COST: $unknown
DESIGNER:
DESIGNER'S OCCUPATION:

CONSTRUCTION DATE: 1959
CONSTRUCTION: Altered
TEXT: Removal of plaques
(http://crs/historic/hsr/abli/pdf/plaque_59.pdf)
* Purchase order
* Contract Specifications
* Memo concerning removal

COST: $1185
DESIGNER: George F. Clark
DESIGNER'S OCCUPATION:
Contractor

CONSTRUCTION DATE: 1959
CONSTRUCTION: Rehabilitation
TEXT: Painting interior (http://crs /historic/hsr/abli/pdf/
paint_59.pdf)
* Memo
* Color schedule

COST: $889
DESIGNER:
DESIGNER'S OCCUPATION:
Contractor

CONSTRUCTION DATE: 1959
CONSTRUCTION: Altered
TEXT: Installed plenum
(http://crs/historic/hsr/abli/pdf/plenum_59.pdf)
* Purchase order
* Contract specifications
* Sectional drawings

COST: $488
DESIGNER: Logan Bennet
DESIGNER'S OCCUPATION:
Contractor

CONSTRUCTION DATE: 1959
CONSTRUCTION: Altered
TEXT: Installed electric lighting (http://crs/historic/hsr/abli/pdf/
lighting_59.pdf) in ceiling skylight
* Purchase order
* Contract specifications

COST: $890
DESIGNER: Hughes & Johnson
Electric
DESIGNER'S OCCUPATION:
Contractor

* document located in Appendix H

CONSTRUCTION DATE: 1959
CONSTRUCTION: Preservation
TEXT: Renovate bronze doors
(http://crs /historic/hsr/abli/pdf/doors_59.pdf)
* Memo for work request
* Purchase order

COST: $700
DESIGNER: Schiller
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1971
CONSTRUCTION: Rehabilitation-
TEXT: Installation of air conditioning
(http://crs /historic/hsr/abli/pdf/hvac_71.pdf
* Purchase order
* Schematic diagram

COST: $13600
DESIGNER: Addie S. French, Inc.
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1971
CONSTRUCTION: Altered
TEXT: Installation of aluminum entrance unit
(http://crs/historic/hsr/abli/pdf/entance_71_po.pdf)
* Purchase order

COST: $815
DESIGNER: Central Glass Co.
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1971
CONSTRUCTION: Altered
TEXT: Installation of 800 feet underground extension to transformer
(http://crs/historic/hsr/abli/pdf/electrical_71_po.pdf)
* Purchase order

COST: $2400
DESIGNER: Kentucky Utilities
DESIGNER'S OCCUPATION: Utility provider

CONSTRUCTION DATE: 1975
CONSTRUCTION: Restoration
TEXT: Cleaning, repointing & waterproofing exterior
(http:crs/historic/hsr/abli/pdf/pointing_77.pdf)
* Section 106
* KY Heritage Commission approval

COST: $10633
DESIGNER: Mid-continental Waterproofing Co.
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1977
CONSTRUCTION: Restoration
TEXT: Repainting interior
(http:crs/historic/hsr/abli/pdf/paint_77.pdf)
* Section 106
* KY Heritage Commission approval
* Purchase Order
* Contract specifications

COST: $1685
DESIGNER: Puckett
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1977
CONSTRUCTION: Altered
TEXT: Construction of information counter
(http:crs/historic/hsr/abli/pdf/infodesk.pdf)
* Memo from 1959
* Purchase order

COST: $447
DESIGNER: Ronnie L. Chelf
DESIGNER'S OCCUPATION:

* document located in Appendix I

CONSTRUCTION DATE: 1977
CONSTRUCTION: Rehabilitation
TEXT: Painting roof light
(http:crs/historic/hsr/abli/pdf/rooflight_77_po.pdf)
* Purchase order

COST: $72
DESIGNER: Puckett
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1979-1981
CONSTRUCTION: Rehabilitation
TEXT: Roof repairs
(http:crs/historic/hsr/abli/pdf/roof_81.pdf)
* Section 106
* Bid acceptance
* Inspection of roof conditions
* Memo to replace skylight
* Memo to flush roof drains
* Unit price contract
* Photographs

COST: $13,807
DESIGNER: McGuffey Industrial Contracting
DESIGNER'S OCCUPATION: Contractor
INSPECTOR: Bishop

CONSTRUCTION DATE: 1979-1982
CONSTRUCTION: Altered
TEXT: Replacement of stairwell cover
(http:crs/historic/hsr/abli/pdf/stairwell cover_79.pdf)
* Section 106 submission
* Purchase order for steel
* Purchase order for glass

COST: $706
DESIGNER FOR STEEL: John Mills
DESIGNER FOR GLASS: Central KY Glass Co.

CONSTRUCTION DATE: 1983
CONSTRUCTION: Rehabilitation
TEXT: Plastering & painting interior
(http:crs/historic/hsr/abli/pdf/paint_83_upc.pdf)
* Unit price contract

COST: $6820
DESIGNER: Cravens Construction Company
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1984
CONSTRUCTION: Rehabilitation
TEXT: Replacement of air conditioning compressors
(http:crs/historic/hsr/abli/pdf/hvac_84_po.pdf)
* Purchase order

COST: $3175
DESIGNER: French Mechanical Inc.
DESIGNER'S OCCUPATION: Contractor

TRIP REPORT: 1984
INSPECTION: Skylight
(http:crs/historic/hsr/abli/pdf/skylight_84_inspec.pdf)
* Report
* Drawing

INSPECTOR: David Ates

* document located in Appendix H

CONSTRUCTION DATE: 1985
CONSTRUCTION: Preservation
TEXT: Repointing Memorial Building and steps (http://crs/historic/hsr/abli/pdf/steps_85.pdf)
* Section 106
* KY Heritage Commission approval
* Unit price contract

COST: $39433
DESIGNER: OHA and R&F Weaver
DESIGNER'S OCCUPATION: Contractor

TRIP REPORT: 1989
INSPECTION: HVAC
(http://crs/historic/hsr/abli/pdf/hvac_89_inspec.pdf)

INSPECTOR: John Eubank

TRIP REPORT: 1990
INSPECTION: Ladder
(http://crs/historic/hsr/abli/pdf/ladder_90.pdf)
* Memo from ABLI
* Memo restricting access
* photos

INSPECTOR: David Ates

CONSTRUCTION DATE: 1990
CONSTRUCTION: Preservation
TEXT: Repointing & cleaning Memorial Building steps
(http://crs/historic/hsr/abli/pdf/pointing_90.pdf)
* Memo of task directive
* Section 106 submission
* Memo status report
* Memo modification of task directive

COST: $ 11513
DESIGNER:
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1991
CONSTRUCTION: Altered
TEXT: Americans with Disabilities compliance
(http://crs/historic/hsr/abli/pdf/ada_91.pdf)
* Section 106 submission
* Purchase order for doors
* Purchase order for handle and rail

COST: $5375
DESIGNER: NPS and Riverside Door Co.
DESIGNER'S OCCUPATION: Contractor

CONSTRUCTION DATE: 1992
CONSTRUCTION: Altered
TEXT: Install receptacle and lighting system
(http://crs/historic/hsr/abli/pdf/electrical_92_po.pdf)
* Purchase order

COST: $580
DESIGNER: Gene Ray Electrical
DESIGNER'S OCCUPATION: Electrician

CONSTRUCTION DATE: 1992
CONSTRUCTION: Rehabilitation
TEXT: Plastering and repainting the Memorial interior
(http://crs/historic/hsr/abli/pdf/paint_92.pdf)
* Section 106
* Requisition
* Contract specifications

COST: $23,450
DESIGNER: Patterson
DESIGNER'S OCCUPATION: Contractor

* document located in Appendix I

CONSTRUCTION DATE: 1992
CONSTRUCTION: Altered
TEXT: Glass tinting
(http://crs/historic/hsr/abli/pdf/tint_92.pdf)
* Section 106 submission
* Estimate

COST: $1,500
DESIGNER: Pro-Tint
DESIGNER'S OCCUPATION:
Contractor

CONSTRUCTION DATE: 1993
CONSTRUCTION: Rehabilitated
TEXT: HVAC system replacement
(http://crs/historic/hsr/abli/pdf/hvac_93.pdf)
* diagram

COST: $unknown
DESIGNER:
DESIGNER'S OCCUPATION:

TRIP REPORT: 1996
INSPECTION: masonry pointing, ladder, basement
(http://crs/historic/hsr/abli/pdf/inspec_96.pdf)

INSPECTOR: Bill Love

* document located in Appendix H

Physical Description

This section contains *a systematic accounting of all features, materials, and spaces according to age, significance, and general integrity. A detailed inventory of individual building features is included in Appendix C, but are summarized in the body of this chapter. The following text and detailed assessment discuss causes of deterioration and structural inadequacy.*

OVERVIEW

The traditional Lincoln birth home is enclosed in the Abraham Lincoln Birthplace Memorial Building, a tall 1 story Beaux Arts Classical building built over a two and a half-year period beginning in February 1909. The cornerstone was laid in honor of the anniversary of Lincoln's 100th birthday. The structure is cubical and serves as the repository for the traditional birth home of Abraham Lincoln. The traditional birth home itself is a simple log cabin with a wood roof and a fireplace attached. The enclosing building features a six-column Doric portico on the south facade and presents a formal and imposing mass atop a long processional stair. The east and west facades each feature a four-columned portico with engaged Doric columns. The north facade recalls the south facade with its inset panels conforming to the south portico spacing. All facades are clad in Stoney Creek Milford Pink Granite.

The Abraham Lincoln Birthplace Memorial Building has been well maintained as part of the National Park System, and all elements and features are in good condition.

ARCHITECTURAL NARRATIVE

The Abraham Lincoln Birthplace Memorial Building is located on a mostly trapezoidal site of approximately 100 acres. The memorial building was constructed at the top of a hill. It is approached from the south via a wide for-

mal stair of fifty-six steps, one for each year of Lincoln's life. It is also accessible by an unpaved service road to the north. The footprint of the building is elevated about one inch above the surrounding platform sidewalk. The platform sidewalk is about 75 feet x 80 feet and features several concrete benches around its perimeter. There are also steps at the center of the east, north, and west sides. It is about 500 feet west of the Visitor Center and is 49'-5" x 36'-6" and 35'-5" to the top of the common parapet. The south facade features a taller pediment. An additional continuous cornice wraps around the structure at a height of 29'-5" on top of a crenelated molding.

South Elevation

Above each of the six columns supporting the portico there is a rosette in the frieze. Spanning the architrave below is an inscription, which reads:

With malice toward none, with charity for all.

Between each pair of columns inset in the wall surface are square windows with a diagonal stone grill-like insert. This pattern allows natural light while simultaneously providing security for the cabin inside. These windows are shadowed by a portico with a coffered ceiling. Each coffer features a floral rosette. The aluminum-framed glass doors and transom are a later alteration to the original masonry opening. The original bronze doors are extant and are behind the glass doors. The doors are decoratively studded in bronze and also have lion's head door knockers and levered handles. Additionally, to either side of the door are inscriptions carved in the wall. The one on the west reads:

Let us have faith
That right makes might
And in that faith let us to
The end dare to do our duty
As we understand it.

Cooper Institute
N.Y. Feb. 27,1860

The quotation on the east reads:

Stand with anybody
That stands right.
Stand with him while he
Is right and part with him
When he goes wrong.

Peoria Ill. Oct. l6, l854

An additional quotation is inscribed on the south facade in the pediment above the portico. It reads:

Here
Over the log cabin where Abraham Lincoln was born
Destined to preserve the Union
and free the slave
A grateful people have dedicated
this memorial
To unity peace and brotherhood
among these States.

In the southeast corner of the south facade in the first masonry course there is a corner dedication stone which reads:

February Twelfth 1909.

North Elevation

The north facade is characterized by its relative austerity when compared to the other facades. It features five recessed windows at the same height and relative location as the windows on the south fa-

cade. Above the windows is a slightly recessed panel, which extends to the cumulative width of the windows. Though possibly designed to include an inscription, the panel provides a transition between the windows and the continuous crenelated cornice. Below the windows are similarly recessed vertical panels, two on either side of the doorway. In the panels adjacent to the doorway there are bronze plaques mounted on the face of the masonry. The plaque to the east reads:

This Memorial erected
By Popular Subscription through
the Lincoln Farm Association

Joseph W. Polk President
Robert J. Collier Vice President
And Chairman Of The Executive
Committee
Clarence H. MacKay Treasurer
Richard Lloyd Jones Secretary
John Russell Pope Architect

Cornerstone Laid By President
Roosevelt February 12th, 1909
Dedicated By President Taft
November 9th, 1911

The similar plaque to the west of the doorway lists the Board of Trustees whose names include William H. Taft, Samuel L. Clemens, Cardinal Gibbons, and Augustus St. Gaudens. The doorway itself is the same as the one in the south facade. It also features an aluminum-framed glass door with transom set to the exterior of the masonry opening and two original paneled bronze doors set to the interior of the masonry opening. The doors are decoratively studded in bronze and have lion's head door knockers and levered handles. There are three maintenance-related original features on the west side of this facade: stair rungs incorporated into the masonry wall to access the roof, a concealed stairway to the basement which runs parallel to the north facade, and opposite to this, a coal chute to supply the original furnace. The stairway has been modified from its original design which included a skylight of glass-block pavers.

East and West Elevations

The east and west elevations are identical in that they feature a four columned portico centered in the facade. The columns are engaged and in between there are tall inset windows. These windows are twice the height of those on the north and south elevations and they are characterized by the same diagonal stone design. To either side of the portico are copper downspouts with brackets of simple decoration. The downspouts pass through the continuous crenelated cornice and then pierce the parapet wall above.

Foundation

Reinforced concrete foundation walls and footings support the masonry-bearing exterior walls.

Structural

Two deep steel reinforced concrete beams which bear on the north and south exterior walls support the roof and frame the opening for the skylight above. The ceiling is suspended from these beams by steel tie bars.

Windows

Steel awning windows are set inside the stone openings. Each window is recessed

behind a decorative stone pattern based on Roman grill work. The opening is divided into four squares, which are further divided diagonally. For taller windows, the pattern is repeated.

Roof

The parapet wall is capped with a single stone band which runs continuously around the building except where a low angle pediment rises on the south elevation. At the north elevation to the west of center a chimney protrudes above the parapet wall. Located to the east of the chimney is the access hatch, which leads from the roof to the interstitial space above the ceiling. The bi-axially-centered skylight interrupts this space and the roof. The original opening was constructed with glass block. The present greenhouse-style skylight is built over the original one foot curb and is enclosed with wired glass in a copper frame. The center ridge runs from east to west. Beneath this enclosure is the original glass block membrane. The roofing itself has been altered and presently features a new membrane roof on top of the earlier material.

Floor Plan

The interior of the building is a large rectangular room used for the exhibition of the traditional Lincoln birth home. The interior measures approximately 35' by 48' and houses the cabin and some free standing furnishings.

Stairways

There are no interior stairways but there are two exterior stairways. One is a poured concrete stair, which leads to the basement along the north elevation. The other is a metal rung stair, which is attached to the north face of the building and accesses the roof.

Flooring

The flooring has a nine inch marble perimeter border. Inside the perimeter border there is brick set in a herring bone pattern which is about six feet wide in each direction. The brick is bordered to the inside by another marble inlay, this one being ten inches wide. It serves to provide a transition between the brick paving and the exposed aggregate concrete which comprises the remainder of the floor toward the center and which serves as the bed on which the log structure is set. Additionally, there are eight diamond-shaped marble inlays which are sixteen inches square. They are centered in each corner of the brick paving and at the midpoints in front of each wall.

Wall and Ceiling Finishes

The interior of the memorial building is characterized by classical details, though there are elements contemporary with the construction era. The walls are finished with a continuous marble-based wainscot and chair-rail above which the wall surface and details are plaster. Surrounding the windows at the east and west is a classical trim, which provides a continuous banding around the finished openings. This pattern is continued on the north and south walls. This banding, though comprised of classical details, is contemporary in design. Toward the top of the wall is a simple classical picture rail molding. Several inches above that, the classical crown molding begins and provides a transition to the coffered ceiling squares. The coffer pattern is four by six around the perimeter with a skylight

in the center. The coffer pattern is further defined by darker shaded banding. Centered in each coffer is a plaster rosette. The skylight lens is set on a copper grid and is composed of corrugated panes. The twenty-one-square grid itself is arranged three by seven.

Doors

Beyond the tall one-story Doric portico are two bronze-paneled doors which figure prominently in the axiality of the building design. This entrance is matched at the north elevation with another central double door. These doors are dominant features of both the interior walls and exterior facades. Above the doorways are classically detailed lintels. The paneled doors are set at the inside of the thresholds, while more recent aluminum entrance doors are set to the outside. Additional descriptions are in the elevation sections above.

Hardware

In addition to the hardware on the doors described in the elevations section above, the only additional hardware is bronze chain fencing with bronze stanchions which surround the cabin. The barrier is an original feature to the design and is set on the interior marble border.

Sources of Information

Adolf K. Placzek. *Macmillan Encyclopedia of Architects*. Vol. 3. London: The Free Press, 1982. p450-451.

Gloria Peterson, *An Administrative History of Abraham Lincoln Birthplace National Historic Site*, National Park Service, 1968.

Abraham Lincoln Birthplace National Historic Site. Scrapbooks and files located at park in Hodgenville, Kentucky.

Collier's Magazine, February 10, 1906, February 15, 1908, February 13, 1909.

Ann Huston HABS Documentation

Requirements for Treatment

As the Memorial Building was constructed with the dedicated purpose to house the Lincoln cabin, the historic structure should continue its present use as a display for the traditional birthplace cabin, without the incorporation of additional visitor services, offices, concessions, or any other tangential programmatic use.

The National Park Service Cultural Resources Management Guideline (DO-28) requires planning for the protection of cultural resources "whether or not they relate to the specific authorizing legislation or interpretive programs of the parks in which they lie." Therefore, the memorial building must be understood in its own cultural context and managed in light of its own values so that it may be preserved unimpaired for the enjoyment of present and future generations.[1]

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1. *"Cultural Resource Management Guidelines," (1997), p. 1.*

Section 106 of the National Historic Preservation Act (NHPA) also mandates that federal agencies, including the National Park Service, take into account the effects of their actions on properties listed or eligible for listing in the National Register and give the Advisory Council on Historic Preservation a reasonable opportunity to comment.

NHPA regulations (36 CFR 800.10) mandate special requirements for protecting National Historic Landmarks. Section 110(f) of the Act requires that the Agency Official, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to any National Historic Landmark that may be directly and adversely affected by an undertaking. Examples of adverse effects include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that are not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

ADA COMPLIANCE

In 1991, the building's north (rear) entrance was altered to meet guidelines in compliance with the Americans with Disabilities Act. This involved the installation of an automatic door, concrete ramp, and suitable hand rails on this entrance to the Memorial. We recommend removal of both the front and rear aluminum entrance units and replacement with a total glass system. The new doors for the rear entrance would also be automated, but we suggest transferring the automatic door button from its placement on the historic bronze door to another location, preferably a free standing or temporary post.

LIGHTING CONDITIONS

Previous alterations to the Memorial's lighting conditions, made at the expense of the building's historic character, should be removed in favor of measures which are less obtrusive. In order to maintain adequate lighting levels, florescent or preferably museum quality spot lights should be mounted along the interstitial walls, above the copper framed rooflight, and allowed to adjust for overcast and evening lighting conditions.

ENTRANCE DOOR ADJUSTMENTS

Any required door labels, including but not limited to: handicapped accessibility, hours of operation, or rules and regulations, will be coordinated with the manu-

facturer of the new door product so as to achieve a solution which is as transparent and uncluttered as possible. Most manufacturers have incorporated such requirements into their designs and it may be possible for the text to be directly engraved into the glass.

Alternatives for Treatment

In the broadest sense, three alternative approaches to the treatment of the Abraham Lincoln Birthplace Memorial Building can be identified: preservation, rehabilitation, and restoration. Each of these approaches is fundamentally different and each has a different impact on the existing historic building.

The first alternative, preservation, would seek simply to repair existing material and maintain the existing character of the building, making those repairs and alterations that are necessary (1) to secure the building and its contents against further deterioration, (2) to eliminate threats to life safety, and (3) to make improvements to the building's fire detection system. A preservation approach would maximize the amount of existing historic material that can be retained and would require the least investment of Park resources.

The second alternative, rehabilitation, would subsume the concerns of the first but would also seek to make improvements and/or alterations that would increase the

building's utility to Park visitors and others that use the building. These would include improvements in accessibility for the disabled and replacement of building systems and/or equipment that may be antiquated but which are not hazardous to the building, its contents, or its occupants. Since this approach would focus on the building's function and not its design, the building's existing character and features would be mostly preserved.

The third alternative, restoration, would seek to return the building to its historic appearance in the year 1911.

ENTRANCE DOORS

If it is not financially possible to replace both aluminum entrance units, the rear handicapped accessible unit may stay intact. Although such a difference would be undesirable, at least the front entrance, which is the focal point of the visitor's ascent to the Memorial, would have a minimal total glass entrance system and not obstruct the original threshold.

U-V PROTECTION

All subsequent modification to the glazing in the Memorial Building, whether as a curatorial or environmental initiative, should seek to choose products which affect the historic character in the least possible way. This includes avoiding tinted and reflective surfaces, impositions on the original door and window units, and the concealment of any opening which is part of the original Pope design.

Ultimate Treatment and Use

The Historic Structure Report seeks to maintain the Memorial Building's present use as a commemorative structure. With the incorporation of the Lincoln Farm Association in 1906, a preservation initiative was begun which advocated the then-contemporary philosophy of containing a historic object (the Traditional Lincoln Birthplace Cabin) within another structure. Since its dedication in 1911, the Memorial Building has assumed a significance which is irreversibly linked to its site and the contents contained within. In light of this interdependence, the report has recognized the difficulty in finding a balance among concerns for the Memorial's architectural integrity, securing access for visitors, and protecting the cabin. With a renewed attention to the importance of the Memorial Building, the report is confident in the ability to establish a restored condition, in compliance with safety and curatorial requirements.

EXTERIOR PROVISIONS

Concern should first be placed on insuring that the build-

ing and its contents are reasonably protected from environmental conditions. Previous efforts by local contractors to secure the roof have produced sub-standard results. Deficiencies include loose and open seams, and areas of detached flashing. The faulty condition of the skylight is noted in historical architect David Ates's inspection, four years following a repair project. As the roof is not visible to the public and since the skylight is not presently used, suggestions have been made to eliminate the element completely. Today, unfortunately, the skylight does not affect the visitor's experience of the Memorial; a consequence of alterations made in 1959. To continue in the path of disenabling the skylight would severely compromise the architectural significance of this building. The rooftop lighting source was an integral component of the initial design; the inspiration for which can be seen in museum and gallery designs from the pre-WWII era. As a case of precedence, the National Gallery of Art in Washington, D.C. (John Russel Pope, 1933) has completed a project to restore their gallery skylights, which are very similar in detail to the greenhouse-type system on the Memorial Building. Their solution involves a three pane glass panel which reduces heat loss and light intensity, while blocking ultraviolet rays. In light of the roof's limited visibility, the introduction of non-historic materials may be acceptable, as long as there is no adverse affect to the historic condition of the building's interior.

INTERIOR PROVISIONS

The cabin will have to be protected during any work to the skylight. This would be especially important during the removal of the plenum, which would probably involve a scaffolding system. Once the roof is stabilized and the skylight is restored, efforts should be focused on removing non-historic elements and restoring material surfaces to the 1909-1911 historic period.

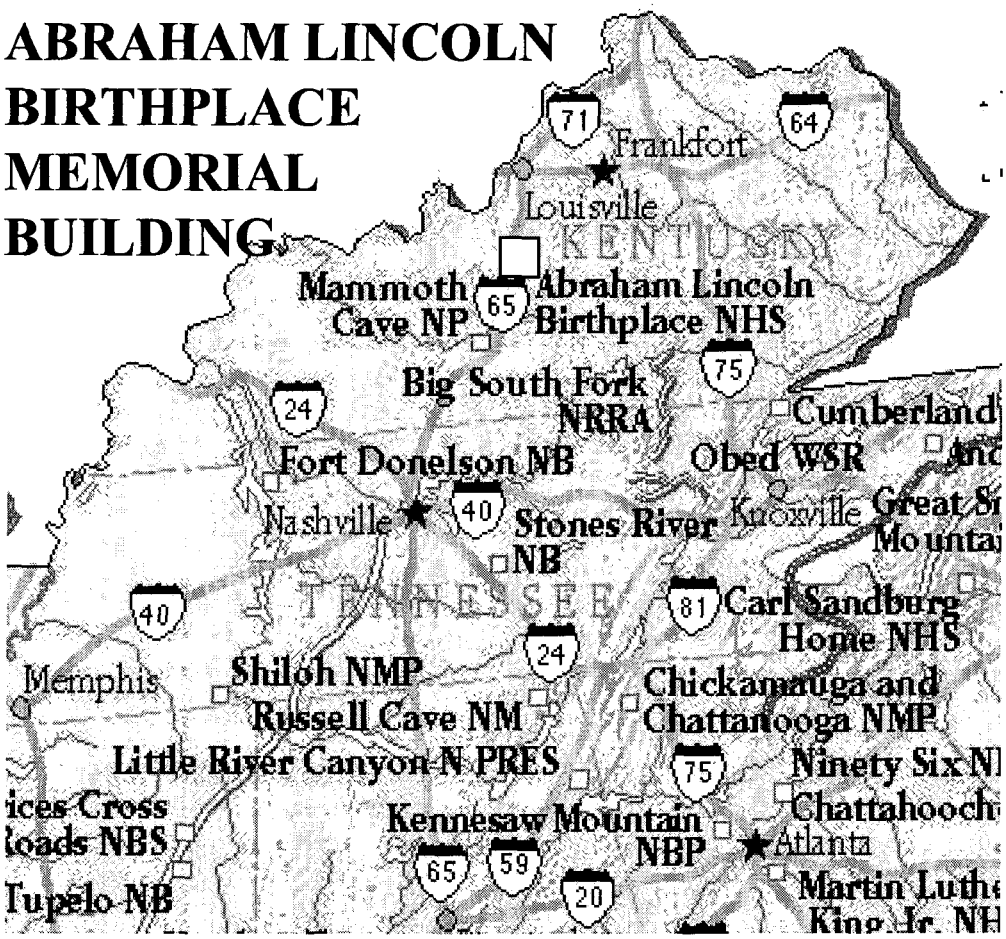
This phase of restoration concerns those details which, instead of being structurally essential, affect the experience of a building conceived at the turn of the century. These include: removal of the aluminum entrance unit and renovating the processional bronze doors, removal of glass tinting, restoring plaster profile, and repainting walls. The next phase of activity involves furnishings connected with the building that are in need of reconstruction or restoration. These include reconstruction of the four interior marble plaques, restoring the engraved text on the exterior granite panels, removing the simulated clay floor in cabin and resurfacing with concrete, and removing or redesigning the ranger desk.

FUTURE PROVISIONS

The Historic Structure Report, through its guidelines, seeks to initiate a new era of dedication, emphasizing accurate and sensitive renovation. Such a focus would merit the building's status as a National Landmark, and furthermore, a project from the oeuvre of a significant American architect. Since the building's importance extends beyond the region, all future work should represent a commitment to the highest standards.

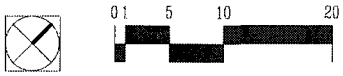
Maps & Drawings

Site of the ABRAHAM LINCOLN BIRTHPLACE MEMORIAL BUILDING

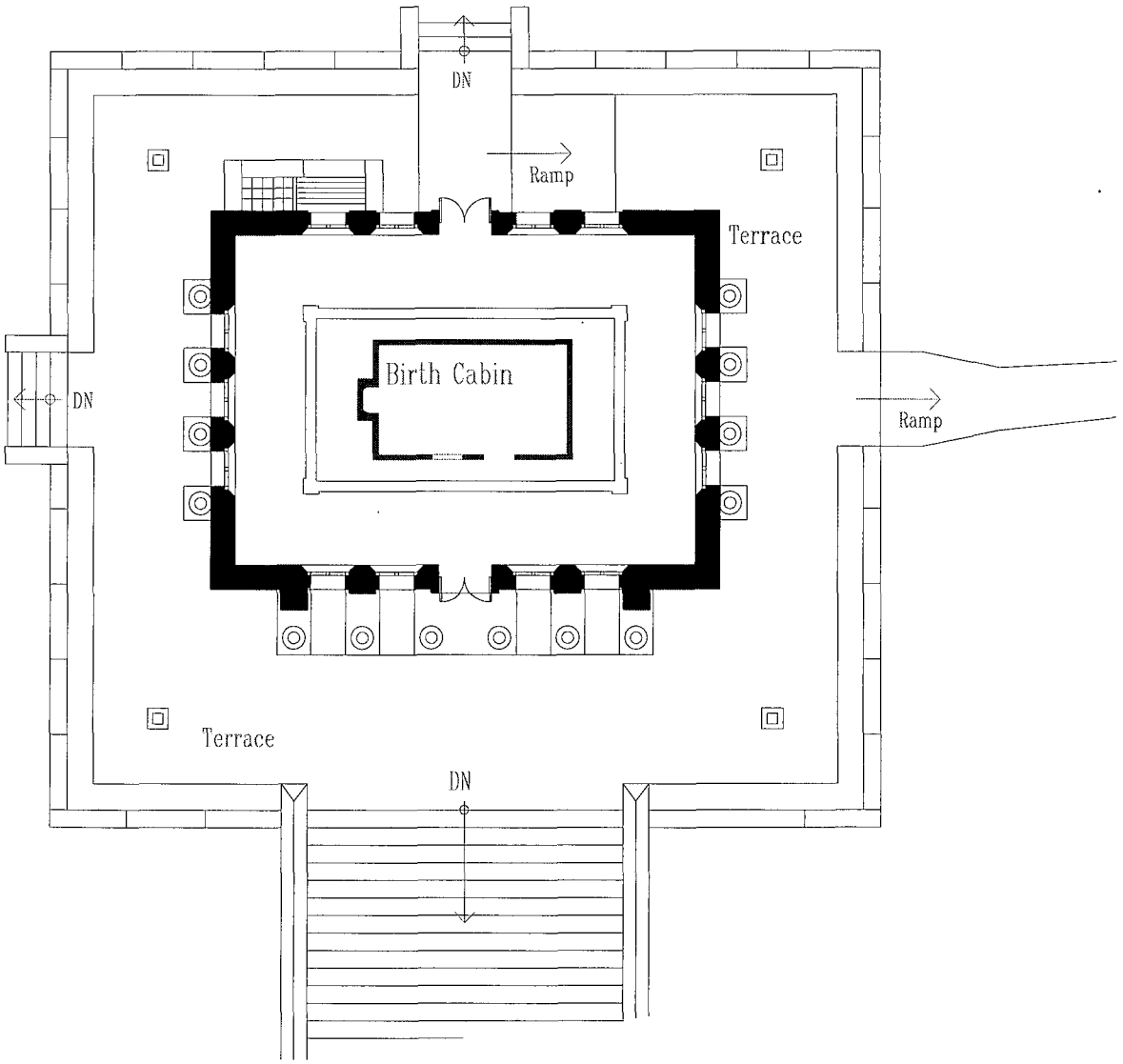


Abraham Lincoln Birthplace National Historic Site

Hodgenville, Kentucky



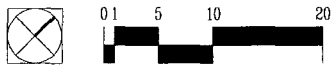
BIRTH CABIN



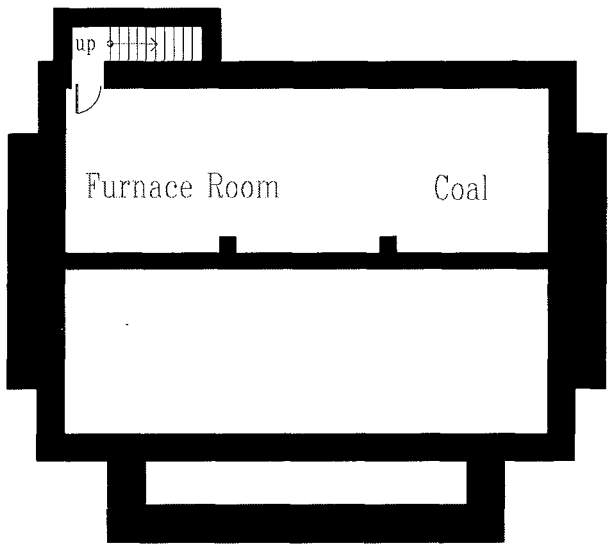
APPENDIX A

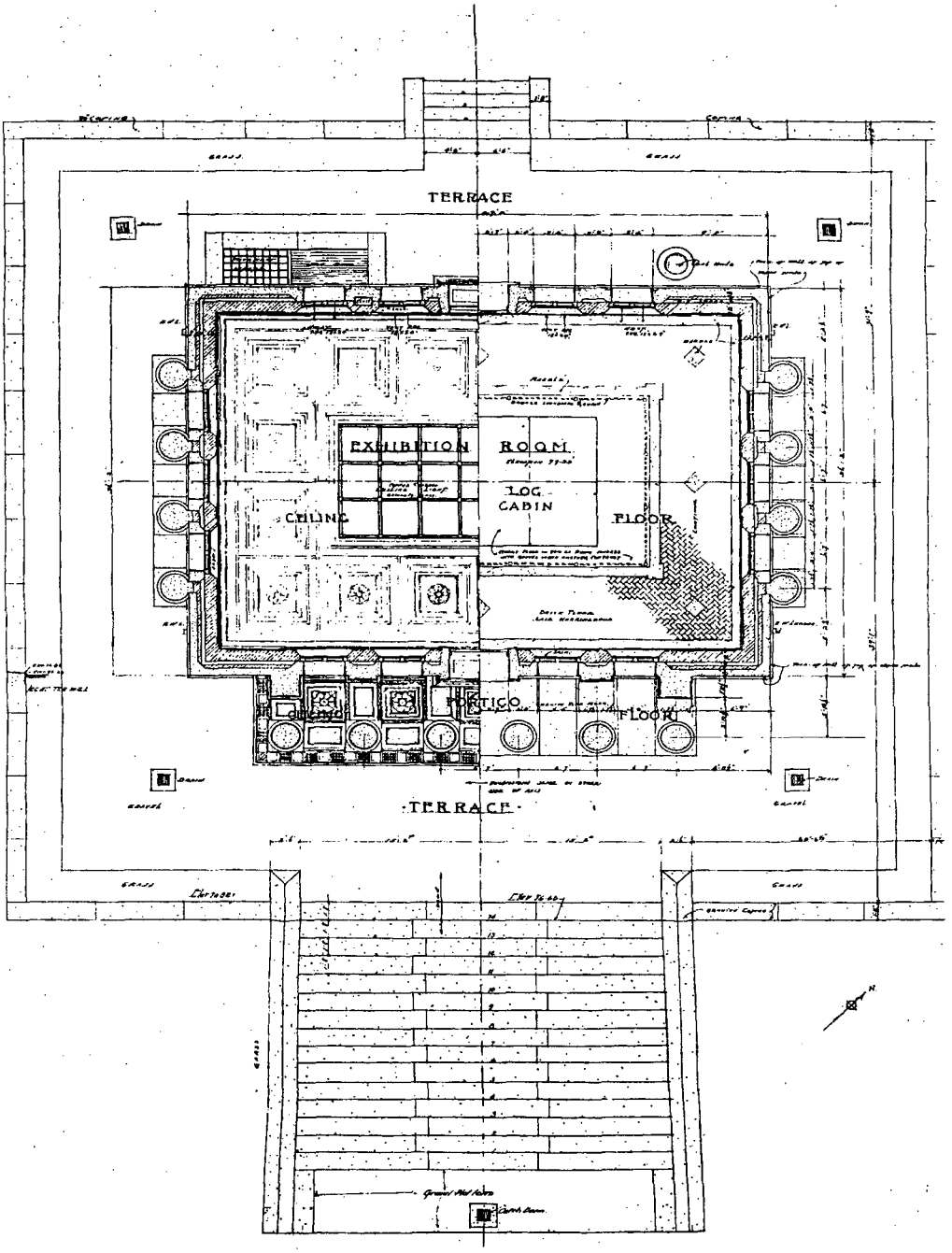
Abraham Lincoln Birthplace National Historic Site

Hodgenville, Kentucky



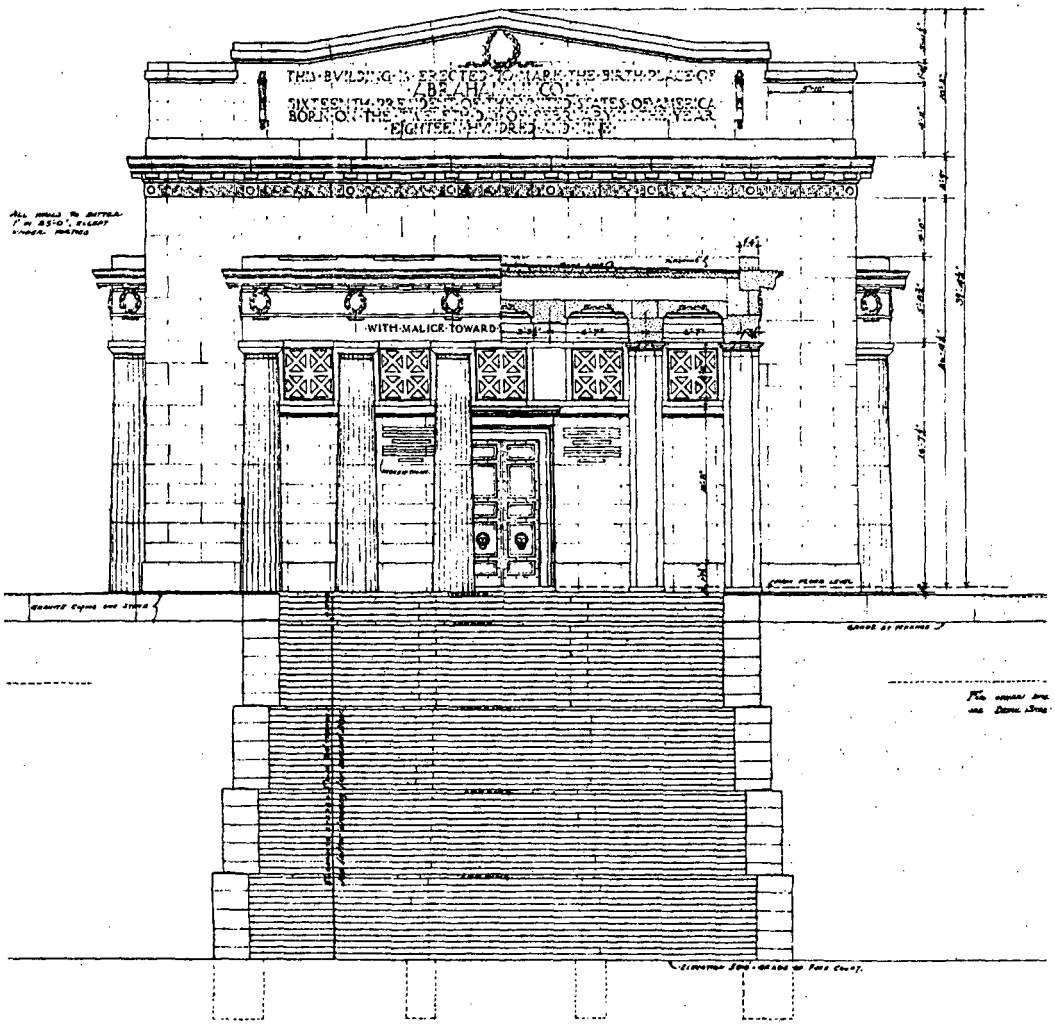
MEMORIAL BUILDING
BASEMENT PLAN





MAIN FLOOR PLAN

APPENDIX A



ELEVATION

APPENDIX B

Photographic Documentation

Figure 1 Abraham Lincoln Birthplace National Historic Site, view to northwest from base of memorial stairs; Memorial Building in background. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

APPENDIX B

Figure 2 Abraham Lincoln Birthplace National Historic Site, view to northwest from third tier of memorial stairs; south elevation of Memorial Building. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 3 Abraham Lincoln Birthplace National Historic Site, east elevation of Memorial Building. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 4 Abraham Lincoln Birthplace National Historic Site, west elevation of Memorial Building. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

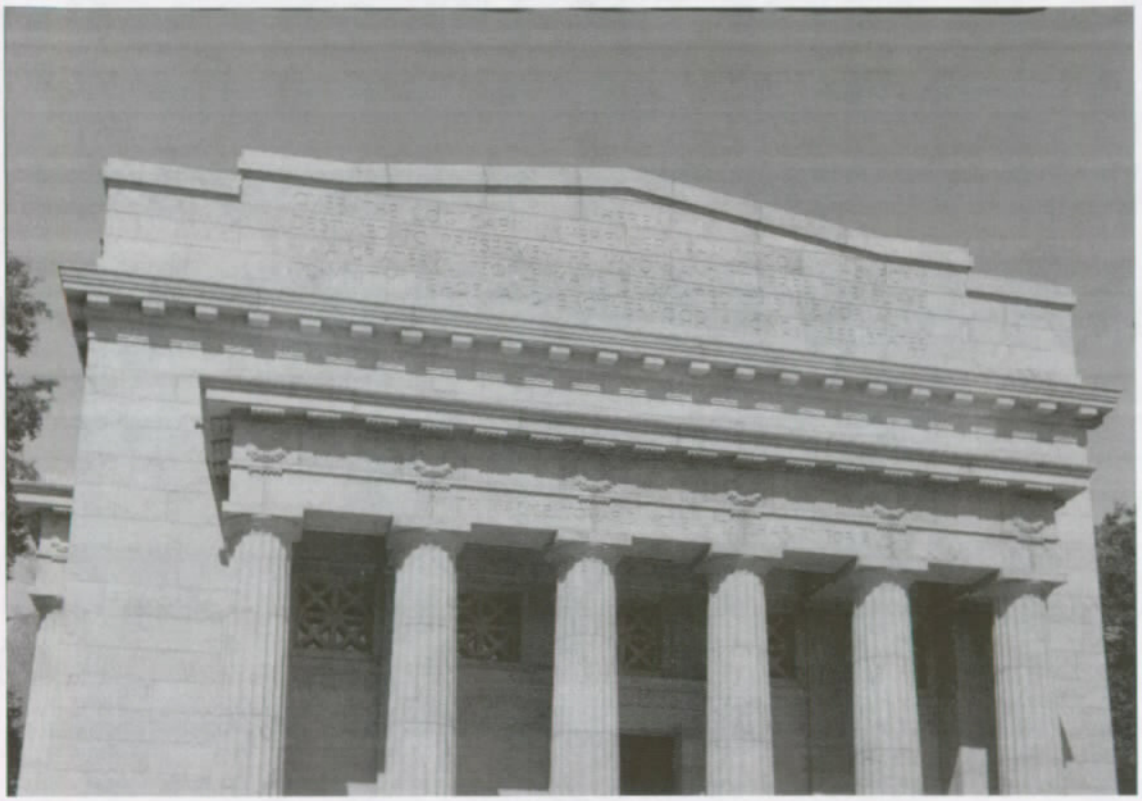


Figure 5 Abraham Lincoln Birthplace National Historic Site, south elevation of Memorial Building; with detail of frieze and pediment. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 6 Abraham Lincoln Birthplace National Historic Site, west elevation of Memorial Building portico. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

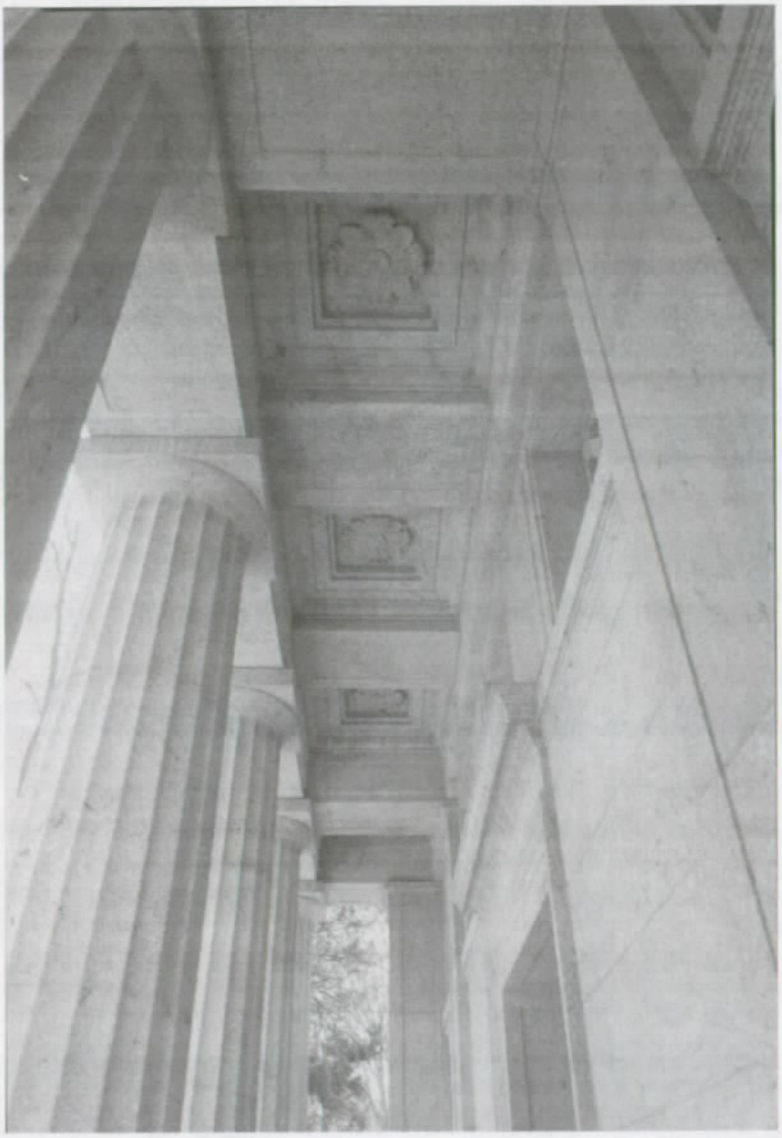


Figure 7 Abraham Lincoln Birthplace National Historic Site, coffered ceiling of Memorial Building portico. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 8 Abraham Lincoln Birthplace National Historic Site, bronze doors at south entrance to Memorial Building. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 9 Abraham Lincoln Birthplace National Historic Site, south wall of Memorial Building interior. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 10 Abraham Lincoln Birthplace National Historic Site, east wall of Memorial Building interior. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 11 Abraham Lincoln Birthplace National Historic Site, north wall of Memorial Building interior. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 12 Abraham Lincoln Birthplace National Historic Site, west wall of Memorial Building interior. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

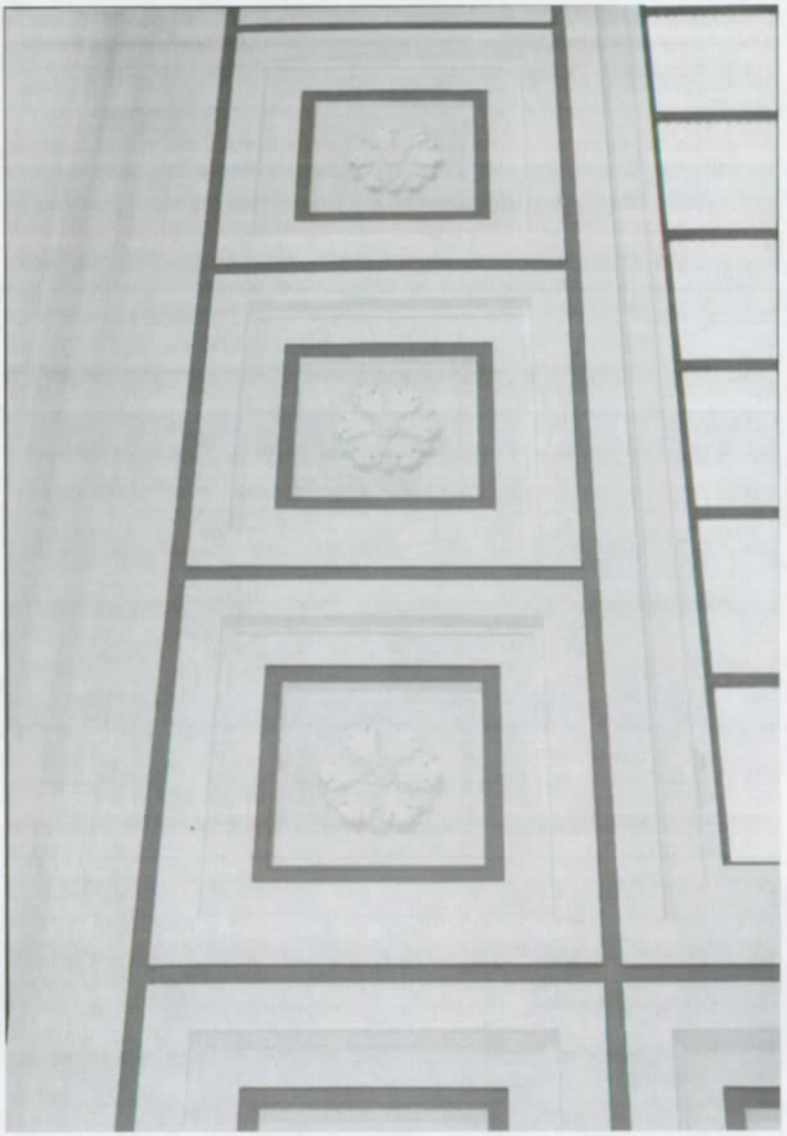


Figure 13 Abraham Lincoln Birthplace National Historic Site, detail of ceiling rosettes, Memorial Building interior. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 14 Abraham Lincoln Birthplace National Historic Site, southeast corner of traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 15 Abraham Lincoln Birthplace National Historic Site, southwest corner of traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 16 Abraham Lincoln Birthplace National Historic Site, northwest corner of traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 17 Abraham Lincoln Birthplace National Historic Site, interior south wall of traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

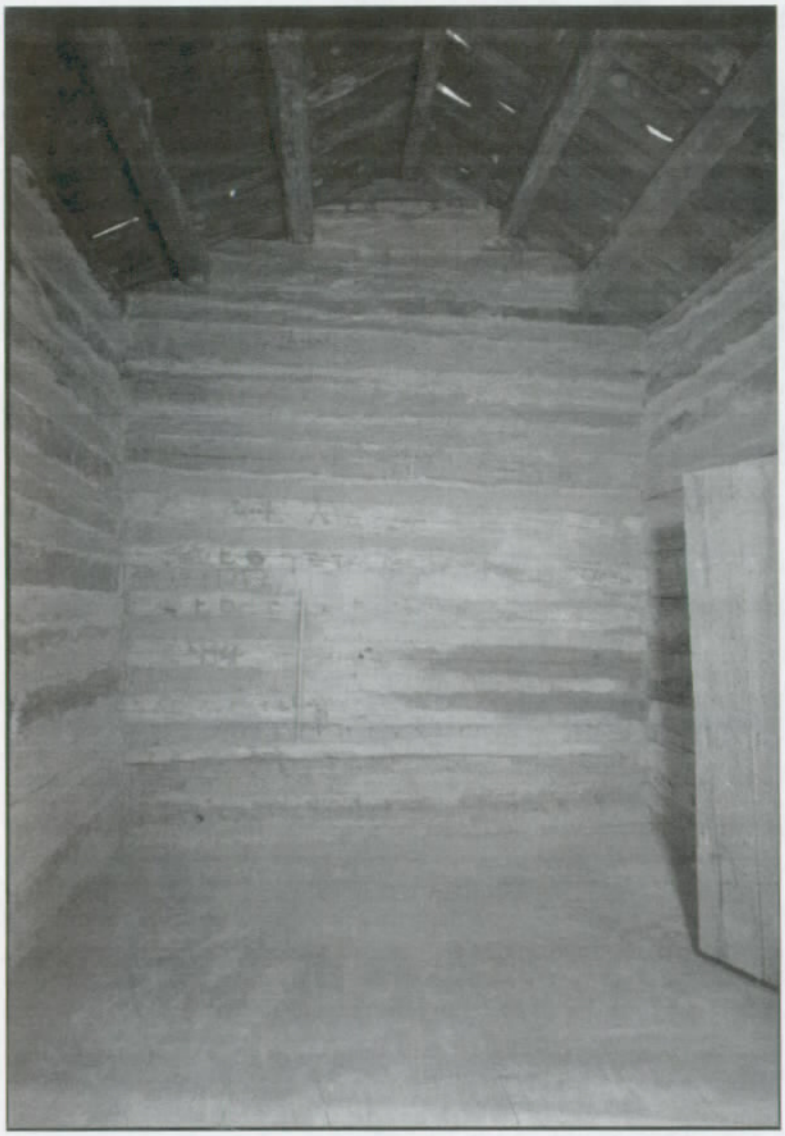


Figure 18 Abraham Lincoln Birthplace National Historic Site, interior east wall of traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

Figure 19 Abraham Lincoln Birthplace National Historic Site, interior west wall of traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

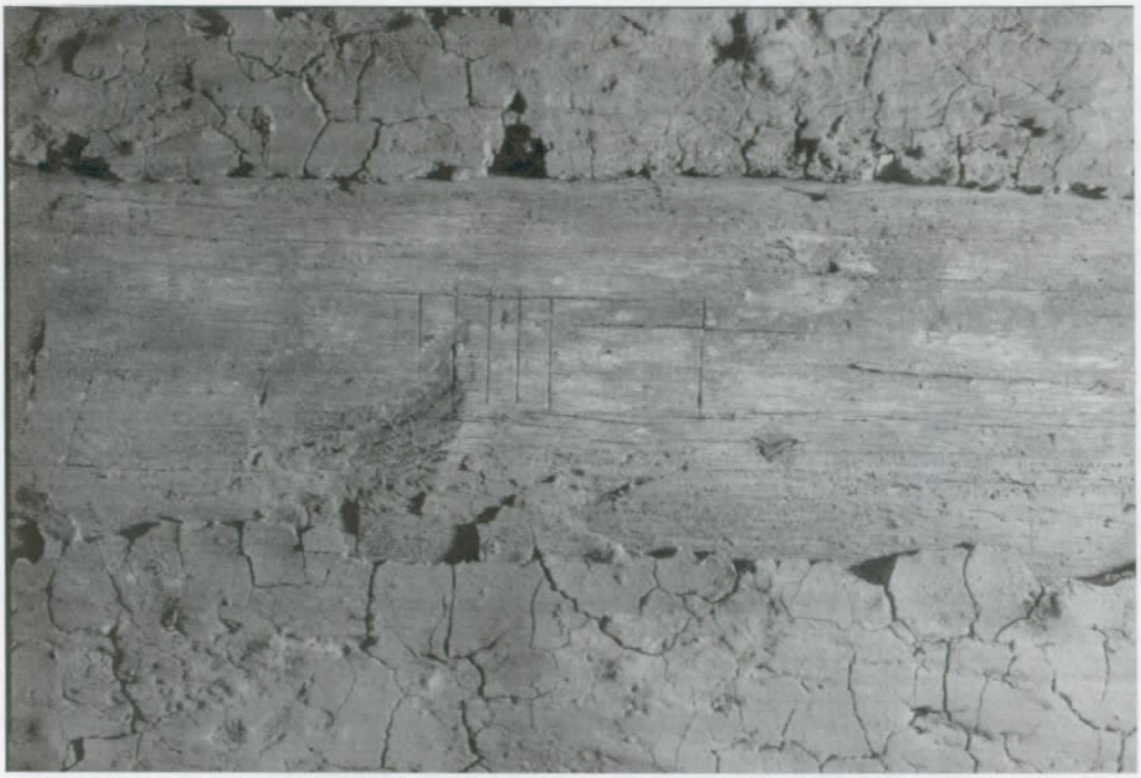


Figure 20 Abraham Lincoln Birthplace National Historic Site, detail of numbered log and clay chinking, traditional Lincoln birthplace cabin. Photographed in 1984. National Park Service, Southeast Region Cultural Resources library.

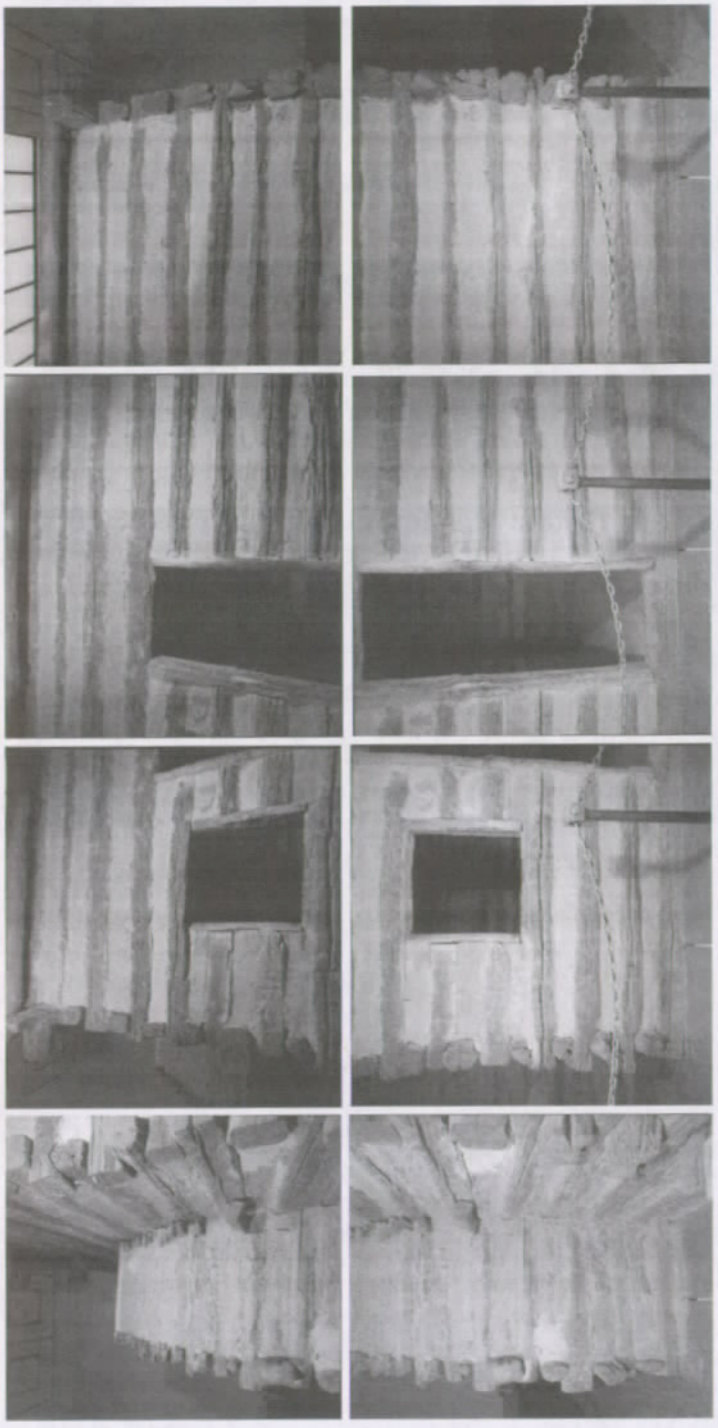


Figure 21 Abraham Lincoln Birthplace National Historic Site, condition of exterior south wall of traditional Lincoln birthplace cabin. Photographs taken June 2, 2000. National Park Service, Southeast Region Cultural Resources library.

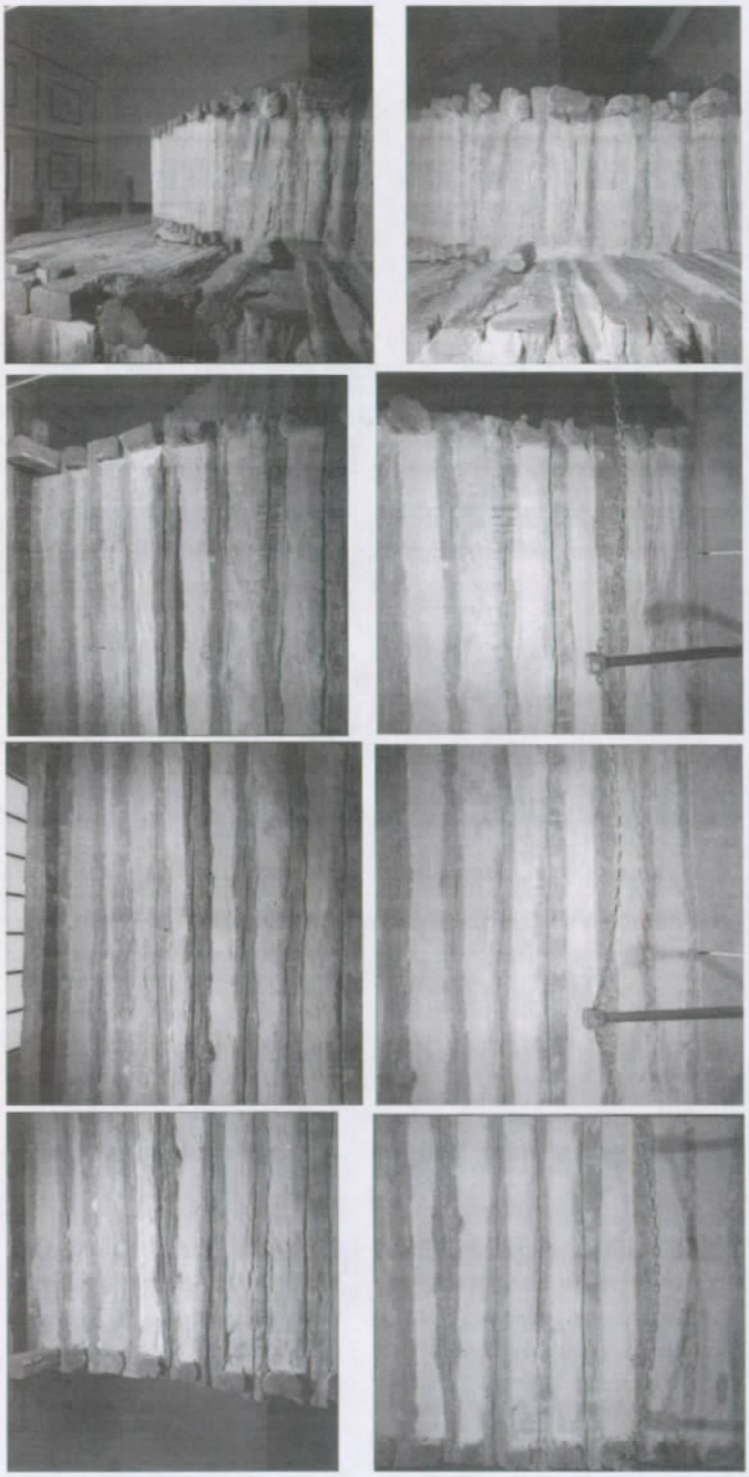


Figure 22 Abraham Lincoln Birthplace National Historic Site, condition of exterior north wall of traditional Lincoln birthplace cabin. Photographs taken June 2, 2000. National Park Service, Southeast Region Cultural Resources library.

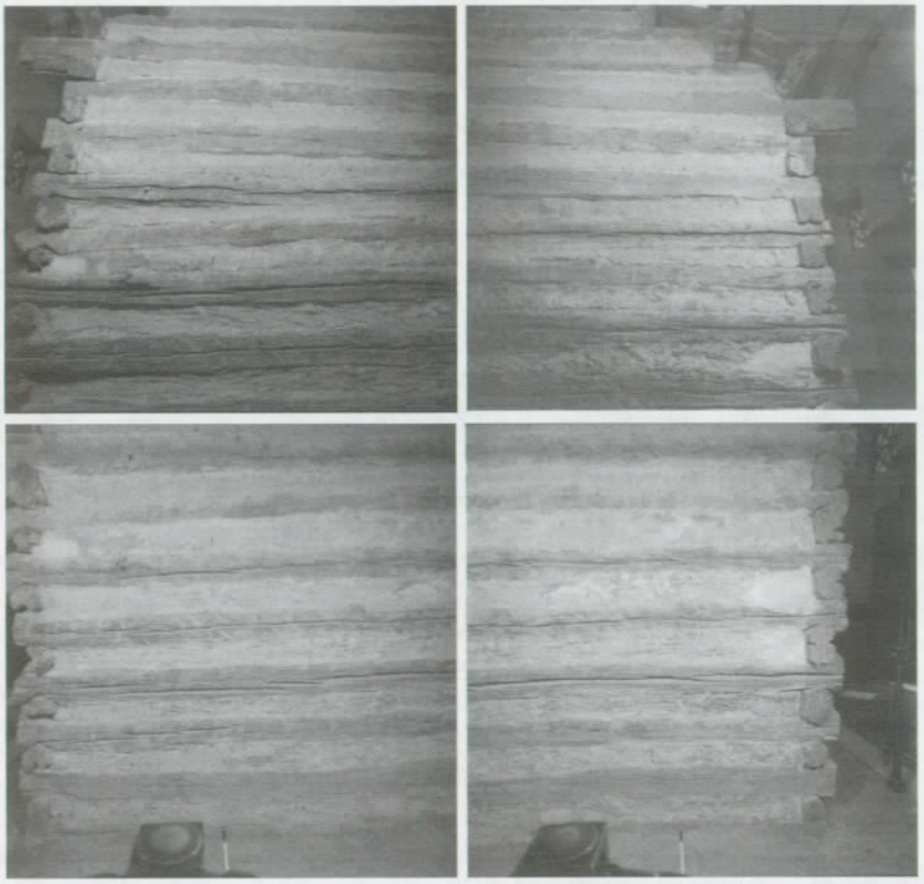


Figure 23 Abraham Lincoln Birthplace National Historic Site, condition of exterior east wall of traditional Lincoln birthplace cabin. Photographs taken June 2, 2000. National Park Service, Southeast Region Cultural Resources library.

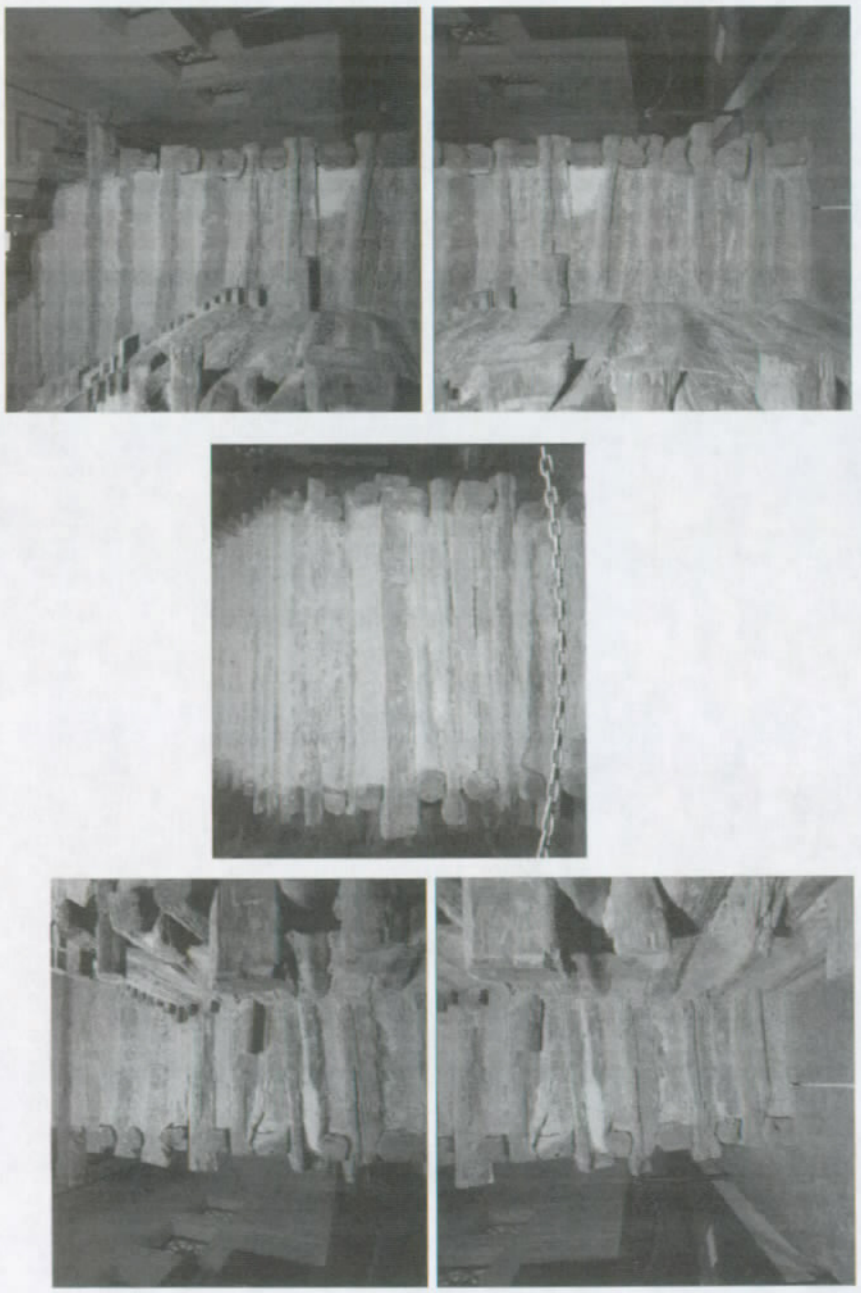


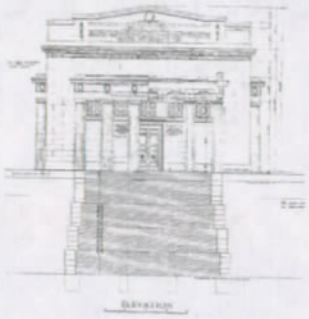
Figure 24 Abraham Lincoln Birthplace National Historic Site, condition of exterior west wall of traditional Lincoln birthplace cabin. Photographs taken June 2, 2000. National Park Service, Southeast Region Cultural Resources library.

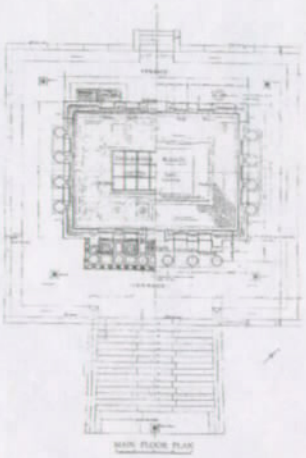
APPENDIX C

Feature Inventory & Condition Assessment - Memorial Building

EXTERIOR 4110 Exterior Wall Surface/cover: Granite

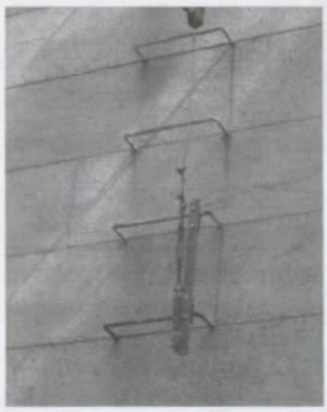
Milford Pink Granite





FEATURE DESCRIPTION: Granite: dressed ashlar, Stony Creek granite (Milford Pink) from Milford, MA. Stone courses are 16" vertically with continuous bed joints (3/16", beaded) and horizontal joints varying between 36" and 55".
FEATURE NOTES: Granite wall parapet approx. 2' above roof (320 SF). Inscriptions appear over front columns, in pediment & to either side of front entrance.
FEATURE CONDITION: 5980.0 SF - GOOD/ 40 SF - FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 6020.0 SF
PRIORITY: SERIOUS
DEFICIENCY: Dirt and mildew buildup on cornice at north elevation. Rusting from the metal roof ladder on the North side has stained the surrounding stone.
RECOMMENDATION: Clean dirt and mildew with water, detergent and soft bristle brush (check mortar joint prior to cleaning). Remove rust by applying a poultice materical to the affected area to draw the stain out of the stone.

Granite wall parapet (Dirt and mildew buildup on cornice)



Rusting from the metal roof ladder

EXTERIOR ENVELOPE

Walls - Ceilings - Floors - Windows - Doors - Finishes

EXTERIOR 4110 Ext. Wall Surface/cover: Granite

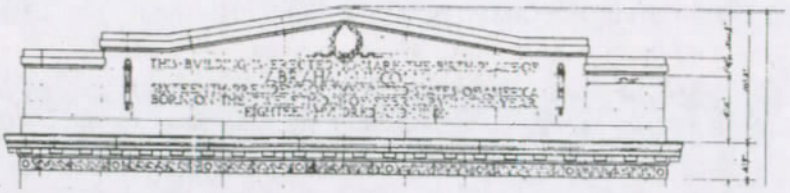
FEATURE DESCRIPTION: Granite: dressed ashlar, Stony Creek granite (Milford Pink) from Milford, MA. Stone courses are 16" vertical with continuous bead joints (3/16", beaded) and horizontal joints varying between 36" and 55".
FEATURE NOTES: Granite wall parapet approx. 2' above roof (320 SF). Inscriptions appear in pediment over front columns, and on panels east and west of the entrance.
FEATURE CONDITION: 5920 SF - GOOD/ 100 SF - POOR
HISTORIC RATING: H
TOTAL INVENTORY: 6020 SF
PRIORITY: SERIOUS/HISTORICAL
DEFICIENCY: Rusting from the metal roof ladder on the North side has stained the surrounding stone. Possible sandblasting has obscured historic inscriptions flanking entrance.
RECOMMENDATION: Clean dirt and mildew with water, detergent and soft bristle brush (check mortar joint prior to cleaning). Remove rust by applying a poultice material to the affected area to draw the stain out of the stone. Consult conservator on most appropriate means to restore the engraved text.
COST ESTIMATE *for combined cleaning of 4110 & 4113*: Materials: $200 Labor/Equipment: $800 Total: $1000

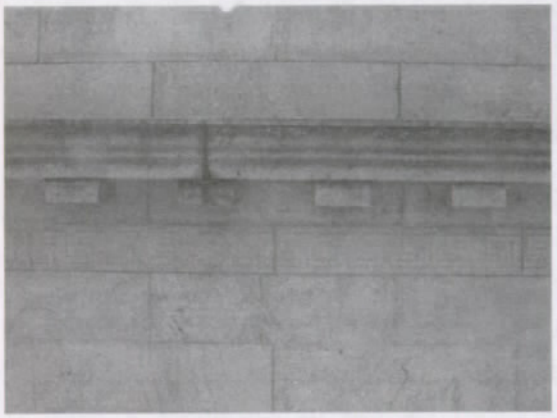
EXTERIOR 4111 Ext. Wall Structure: Granite Ashlar

FEATURE DESCRIPTION: Granite ashlar, approx. 8" thick, on 4" masonry building tile (see **4211 Int. Wall Structure**). The walls are approx. 35' tall and 30" thick overall (32" at base).
FEATURE NOTES: The thickness of the various wall components could not be measured directly, but it appears the exterior stone is 16" thick and the interior masonry is 8" thick (plus 2" finish) with a 4" air space in between.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 5700.0 SF

EXTERIOR 4113 Exterior Wall Trim: Granite

FEATURE DESCRIPTION: Smooth granite base course 24" highand projects 2" from stone wall above./ large granite, denticulated cornice with patterned frieze, 27' above grade
FEATURE NOTES: Dirt and mildew buildup on cornice at north elevation
FEATURE CONDITION: GOOD (250 LF); FAIR (90 LF)
HISTORIC RATING: H
TOTAL INVENTORY: 340 LF





large granite, denticulated cornice with patterned frieze, 27' above grade (above)

Smooth granite base course 24" highand projects 2" from stone wall above (below)

Cornice and Frieze from 26' to 30' above grade (above)

Dirt and mildew buildup on cornice at north elevation (above and below)

EXTERIOR 4114 Ext. Wall Ornament: Bronze

FEATURE DESCRIPTION: North Elevation - In the panels on either side of the doorway there are bronze plaques mounted on the face of the masonry. The plaque which is east of the doorway provides information about the erection team and the plaque to the west presents the Board of Trustees.
FEATURE NOTES:
FEATURE CONDITION: FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 2 EA
PRIORITY: MINOR
DEFICIENCY: These two plaques are now black with corrosion showing in a few areas.
RECOMMENDATION: Cleaned and restore by a metals conservator. Special care should be taken to preserve the original texture of the metal ground behind the lettering.

East plaque (Erection Team)

Detail view (Erection Team)

West plaque (Board of Trustees)

EXTERIOR 4113 Ext. Wall Trim: Granite

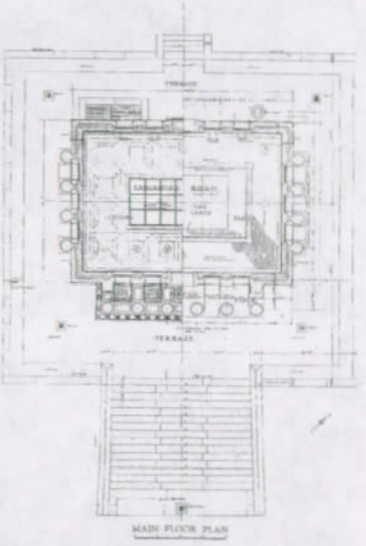
FEATURE DESCRIPTION: Smooth granite base course 24" high and projects 2" from stone wall, above large granite, denticulated cornice with patterned frieze, 27' above grade.
FEATURE NOTES:
FEATURE CONDITION: GOOD (250 LF); FAIR (90 LF)
HISTORIC RATING: H
TOTAL INVENTORY: 340 LF
PRIORITY: MINOR
DEFICIENCY: Dirt and mildew buildup on cornice at north elevation.
RECOMMENDATION: Clean with detergent and soft bristle brush (check mortar joint prior to cleaning)
COST ESTIMATE *for combined cleaning of 4110 & 4113*: Materials: $200 Labor/Equipment: $800 Total: $1000

EXTERIOR 4114 Ext. Wall Ornament: Bronze

FEATURE DESCRIPTION: North Elevation - In the panels on either side of the doorway there are bronze plaques mounted on the face of the masonry. The plaque which is east of the doorway provides information about the erection team and the plaque to the west presents the Board of Trustees.
FEATURE NOTES: 2 each
FEATURE CONDITION: POOR
HISTORIC RATING: H
TOTAL INVENTORY: 10 SF
PRIORITY: MINOR
DEFICIENCY: These two plaques are now black, with corrosion showing in a few areas.
RECOMMENDATION: They should be cleaned and restored by a metals conservator. Special care should be taken to preserve the original texture of the metal ground behind the lettering.
COST ESTIMATE: $600

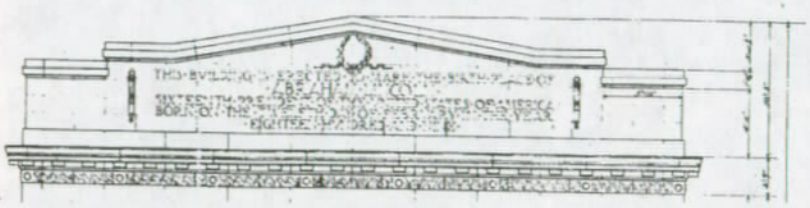
EXTERIOR 4115 Exterior Column/Post: Granite

FEATURE DESCRIPTION: Granite, Doric columns (35" diameter, 16.7' tall, with 20 flutes) supporting large entablature with mutules & wreaths/ 6 free standing columns in front. 2 rectangular (29.5" wide by 24" deep) engaged piers on South side. Cornice and frieze from 26' to 30' above grade.
FEATURE NOTES: 8 engaged (three-quarter) columns on East (4) and West (4) facade.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 16 EA

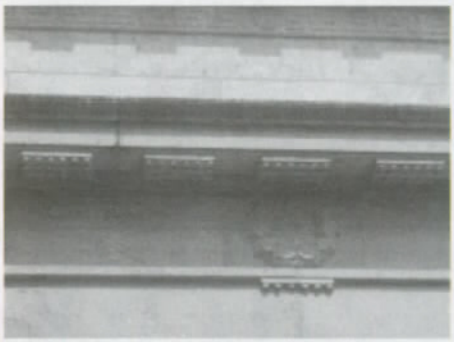


Detail: Fluted Column

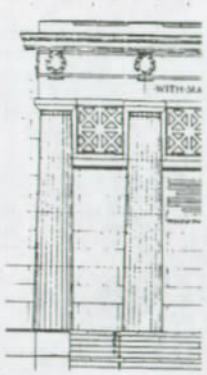
Detail: Column Base



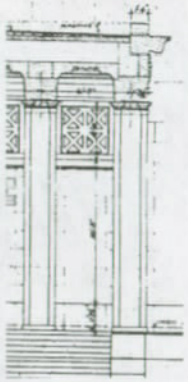
Cornice and Frieze from 26' to 30' above grade



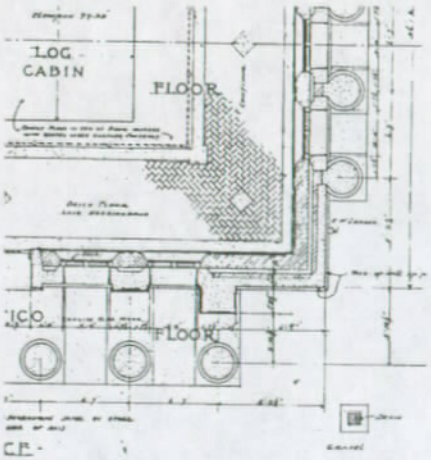
Entablature with Mutules and Wreaths



Detail Elevation: Doric Columns (6)



Detail Elevation: Engaged piers (2)



Plan Detail: Doric Column (6); Rectangular Engaged Piers (2); Engaged (three-quarter) Doric Columns (8)

EXTERIOR 4115 Ext. Column/Post: Granite

FEATURE DESCRIPTION: Granite, Doric columns (35" diameter, 16.7' tall, with 20 flutes) supporting large entablature with mutules & wreaths. Six free standing columns in front, two rectangular (29.5" wide by 24" deep) engaged piers on South side. Each column/pier is composed of four stone segments. Cornice and frieze from 26' to 30' above grade.
FEATURE NOTES: Four engaged (three-quarter) columns each, on East and West facade.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 16 EA

EXTERIOR 4121 Ext. Ceiling (Soffit at Portico) Granite

FEATURE DESCRIPTION: Granite rosettes in square coffering matches motif from interior ceiling. Granite beams frame soffit.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 5 EA.

EXTERIOR 4130 Ext. Floor Surf./cover: Granite

FEATURE DESCRIPTION: Granite base below columns extends 34" beyond South columns on sides and 89" beyond in front.
FEATURE NOTES: Granite base around basement stair and coal chute on North side.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 340 SF

EXTERIOR 4130 Ext. Floor Surf./cover: Cement

FEATURE DESCRIPTION: Cement ramp for handicapped accessibility to Memorial Building.
FEATURE NOTES: Added to existing floor at North (rear) entrance in 1991.
FEATURE CONDITION: GOOD
HISTORIC RATING: N

TOTAL INVENTORY: 450 SF

EXTERIOR 4142 Ext. Window Sash Bronze

FEATURE DESCRIPTION: Three East and three West windows are each three units high (18 units), five North and five South windows are each single units (10 units)
FEATURE NOTES: Bronze hopper units are 40"x40"
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 16 EA

EXTERIOR 4143 Ext. Window Trim: Granite

FEATURE DESCRIPTION: Pierced granite window grille (5" thick with diagonal cross pattern) with 2 weeps at base of each window.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 100 LF

EXTERIOR 4144 Ext. Window Hardware: Bronze

FEATURE DESCRIPTION: Spring latch in center of upper frames, small chains on sides to hold sash open (28 sets)
FEATURE NOTES: One chain missing at lower sash of south window on West side.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 28 EA

EXTERIOR 4145 Ext. Window Sill: Granite

FEATURE DESCRIPTION: Sloped granite block integrated with wall surface.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 16 EA

EXTERIOR 4148 Ext. Window Lintel: Granite

FEATURE DESCRIPTION: Granite integrated with wall surface.
FEATURE NOTES:

FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 16 EA

EXTERIOR 4149 Ext. Window Glazing: Glass

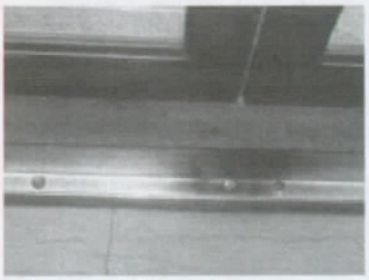
FEATURE DESCRIPTION: Single thickness (5/16) float glass
FEATURE NOTES: Solar film applied to glass
FEATURE CONDITION: FAIR
HISTORIC RATING: H/N
TOTAL INVENTORY: 28 EA
PRIORITY: HISTORICAL
DEFICIENCY: Non-historic, rose-tinted solar film applied to historic glass
RECOMMENDATION: Remove non-historic solar film from glass to restore interior lighting conditions. Apply UV clear film if required for material conservation of the cabin.
COST ESTIMATE: Total: $3000

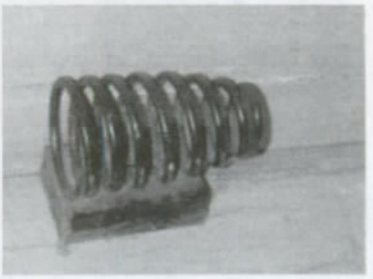
EXTERIOR 4150 Ext. Door Unit: Aluminum/ Bronze

FEATURE DESCRIPTION: *Outer threshold:* bronze colored aluminum store-front, double-size with transom above (rated N); *Inner threshold:* heavy bronze (rated H) *Basement:* arched top metal frame - painted. (rated H); *Plenum space above interior ceiling:* heavy bronze (rated H)
FEATURE CONDITION: FAIR
HISTORIC RATING: H/N
TOTAL INVENTORY: 5 EA
PRIORITY: HISTORICAL/SERIOUS
DEFICIENCY: Uneven and dull black coating on bronze doors; north door is out of plum causing serious ware on threshold; non-historic aluminum store-fronts at both south and north entrances are inappropriate for building.
RECOMMENDATION: Restore the original appearance of the bronze (reddish-golden brown patina); Rehang north door to eliminate ware on threshold; Relocate handicapped access button from surface of north door; Remove bronze colored aluminum store-front and door at south and north entrances and replace with total glass system.
COST ESTIMATE *for demolition*: $1500 ***for bronze restoration*:** $20,800.00

EXTERIOR 4150 Exterior Door Unit: Bronze

FEATURE DESCRIPTION:Outer: bronze colored aluminum store-front, double size with transom above (rated N) ; Inner: heavy bronze (rated H)
FEATURE NOTES: Basement: arched top metal frame - painted.(rated H); Plenum space above interior ceiling: heavy bronze (rated H)
FEATURE CONDITION: GOOD
HISTORIC RATING: H/N
TOTAL INVENTORY: 5 EA





EXTERIOR 4151 Ext. Door Frame: Aluminum/ Bronze

FEATURE DESCRIPTION: *Outer threshold:* bronze colored aluminum storefront, double size with transom above (rated N); *Inner threshold:* heavy bronze (rated H); *Basement:* arched top metal frame - painted. (rated H); *Plenum space above interior ceiling:* heavy bronze (rated H)
FEATURE CONDITION: FAIR
HISTORIC RATING: N/H
TOTAL INVENTORY: 5 EA
PRIORITY: HISTORIC/SERIOUS
DEFICIENCY / RECOMMENDATION: See **4150 Ext. Door Unit**

EXTERIOR 4152 Ext. Door: Aluminum/ Bronze

FEATURE DESCRIPTION: *Outer threshold:* aluminum entrances doors with full glass, 2'-5"x7'-0"/ *Inner thresh*old: large bronze double doors with recessed panels and studs, 2'-6"x 9'-10"
FEATURE NOTES: *Basement:* arched top kalemein-clad door with glass.; *Plenum space above interior ceiling:* single kalemein-clad door with recessed panel.
FEATURE CONDITION: FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 9 EA
PRIORITY: HISTORIC/SERIOUS
DEFICIENCY / RECOMMENDATION: See **4150 Ext. Door Unit**

EXTERIOR 4153 Ext. Door trim: Granite/Wood

FEATURE DESCRIPTION: *Grade entrance:* Granite molding 11" wide with projecting cornice at both entrances; *Basement:* Wood trim at basement door.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 50 LF
PRIORITY: MINOR
DEFICIENCY: Wood trim at basement door is loose.

EXTERIOR 4154 Ext. Door Hardware: Aluminum/ Bronze

FEATURE DESCRIPTION: *Outer threshold:* standard push/pull, hinges and holders; Inner threshold: lion's head relief with pull ring in center round; bronze lever in stile. Bolts in top and bottom of fixed panel of double doors; Basement Door: round knob & escutcheon; Plenum space above interior ceiling: round knob & escutcheon
FEATURE NOTES: Door stops, detached wood blocks with springs.
FEATURE CONDITION: POOR
HISTORIC RATING: H
TOTAL INVENTORY: 9 EA
PRIORITY: HISTORIC/SERIOUS
DEFICIENCY: Uneven and dull black coating; loosened and strained handles.
RECOMMENDATION: See **4150 Ext. Door Unit**

EXTERIOR 4155 Ext. Door Sill: Bronze

FEATURE DESCRIPTION: Large bronze floorplate at entrance doors
FEATURE NOTES: South door plate is worn smooth; North door plate scratched since door out of plum.
FEATURE CONDITION: FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 2 EA
PRIORITY: SERIOUS
DEFICIENCY: Uneven and dull black coating; worn and scratched.
RECOMMENDATION: Consult metals conservator.
COST ESTIMATE: See **4150 Ext. Door Unit**

EXTERIOR 4158 Ext. Door Lintel: Granite

FEATURE DESCRIPTION: Granite with cornice.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 2 EA

EXTERIOR 4159 Ext. Door Glazing: Glass

FEATURE DESCRIPTION: *Outer threshold:* aluminum entrances doors - single thickness glass with solar film in doors & transom; *Basement:* translucent wire glass
FEATURE CONDITION: GOOD
HISTORIC RATING: N
TOTAL INVENTORY: 2 EA
PRIORITY: HISTORIC
DEFICIENCY: Visually inappropriate rose-tinted film on North and South entrance doors.
RECOMMENDATION: See **4149 Ext. Window Glazing** estimate accounts for removal of tint on existing aluminum doors.

EXTERIOR 4170 Ext. Stair/Ramp Surface: Granite

FEATURE DESCRIPTION: Granite slabs form risers (5") & treads (20"); Monumental stairs: 30' wide in front - 56 risers; Secondary stairs to terrace: 9' wide on North, East, and West approaches- 2 risers each.
FEATURE NOTES: Monumental stair last repaired and repointed in 1990
FEATURE CONDITION: GOOD (3000 SF); FAIR (300 SF); POOR (60SF)
HISTORIC RATING: H
TOTAL INVENTORY: 3360.0 SF
PRIORITY: MINOR
DEFICIENCY: Chipped and eroding stone corners; failed sealant joints.
RECOMMENDATION: Replace/patch with like or compatible substitute materials. Repoint joints.
COST ESTIMATE: Materials: $1000 Labor: $10,000 Total: $11,000

EXTERIOR 4171 Ext. Stair/Ramp Structure: Concrete

FEATURE DESCRIPTION: Concrete stair to basement (38 SF); concrete foundation for terrace stairs
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 3400.0 SF

EXTERIOR 4173 Ext. Stair/Ramp Railing: Metal

FEATURE DESCRIPTION: No handrail or guardrail at terrace stairs; 30" wide by

6" high (minimum) stone coping beside front steps (280 LF), 20" coping around terrace & other terrace stairs (260 LF); non-historic mounted on entrance to basement
FEATURE CONDITION: GOOD
HISTORIC RATING: H/N
TOTAL INVENTORY: 540.0 LF

EXTERIOR 4190 Ext. Other: Ladder Iron/Wood

FEATURE DESCRIPTION: Ladder to roof: iron bars inserted between stone courses on north elevation; ladder projects around cornice; incorporated pulley system
FEATURE NOTES: A loose wood ladder with pipe rungs (stored in basement, 117" long, 14" wide) with steel hooks at top to connect to steel rungs imbedded in building on North side.
FEATURE CONDITION: POOR
HISTORIC RATING: H
TOTAL INVENTORY: 3 EA
PRIORITY: CRITICAL
DEFICIENCY: Rusting iron; loose wall connectors.
RECOMMENDATION: Clean and refinish ladder. Secure steel rungs to wall.Consult specialist to develop new safety harness system.
COST ESTIMATE *for replacement*: Materials: $1350 Labor/Equipment: $1150 Total: $2500

EXTERIOR 4190 Ext. Other: Coal Chute Granite/Iron

FEATURE DESCRIPTION: Coal chute with granite surround and iron cover.
FEATURE NOTES: Circular opening located to the east of the North entrance. Provided grade access to furnace in basement.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1 EA

EXTERIOR 4190 Ext. Other: Wall Vent Copper

FEATURE DESCRIPTION: Air space (4" wide) in exterior wall vented with copper grille at base of wall and turned brick in plenum space above interior ceiling.
FEATURE CONDITION: GOOD
HISTORIC RATING: H

TOTAL INVENTORY: 1 EA
PRIORITY: MINOR
DEFICIENCY: The grille has fairly uniform coating of verdigris corrosion. There does not appear to be significant or rapid deterioration.
RECOMMENDATION: The grille should be gently cleaned and the verdigris left in place.
COST ESTIMATE: $300

INTERIOR ENVELOPE

Walls - Ceilings - Floors - Windows - Doors - Finishes

INTERIOR 4210 Int. Wall Surface/Cover: Plaster/Stucco

FEATURE DESCRIPTION: Plaster, painted (2820 SF);concrete, painted, in basement (1000 SF)
FEATURE NOTES: In 1941 two of the four marble plaques were temporarily covered over with plaster. In 1959 all four marble plaques (one on either side of two entrance doors) were removed and plaster was installed to match remaining blank panels.
FEATURE CONDITION: FAIR
HISTORIC RATING: H/T
TOTAL INVENTORY: 3820 SF
PRIORITY: HISTORIC
DEFICIENCY: Poorly executed plaster repairs (uneven textures); spray-applied and brush applied "skim coat" thick coating which has left drips and a very rough texture showing on the painted surfaces.
RECOMMENDATION: Replace marble plaques. Resurface plaster per historic finish (to resemble cut stone).
COST ESTIMATE: ***Restoration of Plaster***: $65,200 ***Re-painting walls:*** $32,000 Total: $97,200

INTERIOR 4211 Int. Wall Structure Masonry

FEATURE DESCRIPTION: Masonry building tile 12" thick, separated from outer structure by 4" air space; *note*: basement concrete not included
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 3880 SF

INTERIOR 4213 Int. Wall Trim Marble/Plaster

FEATURE DESCRIPTION: WAINSCOT: Marble wainscot with base & cap (138 LF, 605 SF), PLASTER MOLDING: picture molding approx. 2' from ceiling (152 LF)
FEATURE NOTES: The cornice and neck moulding have been patched and repaired repeatedly.
FEATURE CONDITION: GOOD
HISTORIC RATING: H/T
TOTAL INVENTORY: 290 LF
PRIORITY: SERIOUS
DEFICIENCY: WAINSCOT: deeper scratches and gouges; dull finish. PLASTER MOLDING: Fine white mycelia growth; small dots or "freckles" of rust stain, condensation droplets, indicating that water is migrating over metal work somewhere. Profiles were not run using an accurate template mounted on a "horse" in the craftsmanlike manner.
RECOMMENDATION: WAINSCOT: Clean and repolish the marble. The deeper scratches and gouges shall be honed out before repolishing. After repolishing, no protective coating should be applied. Rather, the marble should simply be cleaned with a mild detergent (or a conservatorial nonionic detergent) and water, dried with a chamois cloth, and if necessary, buffed with a lambswool buffer to bring up the polish again. PLASTER MOLDING: Determine where water is migrating from and eliminate access point(s). Clean, repair cracks, and resurface plaster to historic profiles/finish.
COST ESTIMATE *for restoration of marble*: $4.00 per sq. ft. Total: $10,500

INTERIOR 4220 Int. Ceiling Surface/Cover Plaster/Copper

FEATURE DESCRIPTION: Exhibit Hall: flat plaster, painted (1160 SF)- see ceiling trim and ornament; Basement ceiling: concrete, painted (660 SF)
FEATURE NOTES: copper covered ceiling lights with acrylic panels (240 SF)
FEATURE CONDITION: FAIR
HISTORIC RATING: H/N
TOTAL INVENTORY: 2060 SF
PRIORITY: SERIOUS/HISTORIC
DEFICIENCY: Exhibit Hall: historic copper ceiling grid with non-historic acrylic panels. Plaster: fine white mycelia growth; small dots or "freckles" of rust stain, condensation droplets, indicating that water is migrating over metal.
RECOMMENDATION: Remove non-historic acrylic panels and replace with material similar to frosted glass to restore ceiling to historic period 1909-ca1911.

Determine where water is migrating from and eliminate access point(s). Clean and repair cracks (see Preservation Brief #21: Repairing Historic Flat Plaster-Walls and Ceilings). Remove non-historic plenum and lights. Rehabilitate lighting conditions with side wall mounted lighting system.
COST ESTIMATE *for replacing panels*: Materials: $9000 Labor: $2400 Total: $11,400***; for removing plenum:*** Labor: $1800***; for replacing lights:*** Materials: $1000 Labor: $2000 Total: $3000
Total: $16,200

INTERIOR 4221 Int. Ceiling Structure Concrete

FEATURE DESCRIPTION: Suspended reinforced concrete slab (1160 SF), steel hangers support ceiling light frame.
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 152 SF

INTERIOR 4223 Int. Ceiling Trim Plaster

FEATURE DESCRIPTION: Decorative plaster cornice, painted.
FEATURE CONDITION: GOOD
HISTORIC RATING: H/T
TOTAL INVENTORY: 152 SF
PRIORITY: SERIOUS
DEFICIENCY: Fine white mycelia growth; small dots or "freckles" of rust stain, condensation droplets, indicating that water is migrating over metal work somewhere. Profiles were not run using an accurate template mounted on a "horse" in the craftsmanlike manner.
RECOMMENDATION: Determine where water is migrating from and eliminate access point(s). Clean, repair cracks and repaint plaster. Remove excess plaster to reastablish historic profile. If necessary remove improper patch and repair using proper preservation methods (see NPS Preservation Brief 23: Preserving Historic Ornamental Plaster).
COST ESTIMATE: See **4210** for cost.

INTERIOR 4224 Int. Ceiling Ornament Plaster

FEATURE DESCRIPTION: Plaster rosettes in square coffering.
FEATURE CONDITION: GOOD
HISTORIC RATING: H

TOTAL INVENTORY: 16 EA
PRIORITY: MINOR
DEFICIENCY: The thick spray coating has gathered in drips at the ends of all downward curving points on the rosettes. While this is not a condition that endangers the plasterwork and probably is not noticed by visitors to the building, it nevertheless adds to the general degrading of the original well-defined surfaces, mouldings, and details of plasterwork on the interior.
RECOMMENDATION: Remove excess spray coating to re-establish historic profile.(see NPS Preservation Brief 23: Preserving Historic Ornamental Plaster).
COST ESTIMATE: See **4210** for cost.

INTERIOR 4230 Int. Floor Surface/Cover Brick/Marble

FEATURE DESCRIPTION: Brick (730 SF) laid in herringbone pattern with Tennessee marble borders & squares (200 SF); Unreinforced concrete fill with projecting gravel in and around cabin. (470 SF). Bare concrete floor in basement (660 SF)
FEATURE NOTES: The floor of the cabin was historically concrete. Due to extensive cracking and patching of the floor and the interest by park staff in providing a more realistic appearance to the cabin floor a new floor was installed in 1959. The new floor was made of clay and glue with wire mesh laid (1") over the historic concrete to simulate a smooth, hard packed, dark earth floor with cracks.
FEATURE CONDITION: GOOD/FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 2060 SF
PRIORITY: MINOR
DEFICIENCY: Non-historic clay floor in cabin
RECOMMENDATION: Remove simulated clay floor in cabin and restore concrete floor per historic period 1909 - ca1911
COST ESTIMATE *for removal and replacement of concrete*: Materials: $1100 Labor/Equipment: $8800 Total: $9000; ***for restoration of marble:*** included in **4213**.

INTERIOR 4231 Int. Floor Structure Concrete

FEATURE DESCRIPTION: Concrete (one way span 84") slab with E-W beam (10" wide x 14" deep plus slab), concrete slab on grade in basement.
FEATURE NOTES: Concrete beam has vertical crack (0.1"±) directly over each brick pier.
FEATURE CONDITION: GOOD
HISTORIC RATING: H

TOTAL INVENTORY: 2060 SF

INTERIOR 4253 Int. Window Trim Plaster

FEATURE DESCRIPTION: Splayed plaster jambs around openings, raised plaster molding around all windows from wainscot up 14'.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 960 LF

INTERIOR 4253 Int. Door Trim Marble

FEATURE DESCRIPTION: Marble molding with projecting cornice at both entrances, same as exterior, sides 11", cornice 29"
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 50 LF

INTERIOR 4253 Int. Finishes Paint/Clear Coat

FEATURE DESCRIPTION: Circa 1959 blue-tone color schedule on walls and ceiling.
FEATURE NOTES: Accent colors on architectural molding, rosettes, etc.
FEATURE CONDITION: FAIR
HISTORIC RATING: N
TOTAL INVENTORY: 290 LF
PRIORITY: HISTORIC
DEFICIENCY: Non-historic interior finishes.
RECOMMENDATION: Paint plaster interior per historic period 1909 - ca1933 (see Materials Analysis). When the building is repainted, and loose material is removed, it is very important to have surface preparation done which carefully removes all unevenness--i.e., sand down the edges where heavy build-up meets bare substrate.
COST ESTIMATE : see **4210** for cost.

INTERIOR 4290a Int. Envelope: Wall Grille Plate Bronze

FEATURE DESCRIPTION: Air space (4" wide) in exterior wall vented with bronze

HVAC grille plate
FEATURE CONDITION: POOR/FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 4 EA
PRIORITY: MINOR
DEFICIENCY: Surface is dull and dirty.
RECOMMENDATION: The grille should be gently cleaned/polished and the verdigris left in place.
COST ESTIMATE: $1000.00

INTERIOR	4290b	Int. Envelope: stanchions/ chains	Bronze

FEATURE DESCRIPTION: Bronze stanchions, set on the interior marble border, connected by chains to surround the cabin.
FEATURE CONDITION: FAIR
HISTORIC RATING: H
TOTAL INVENTORY: 1200 LF
PRIORITY: MINOR
DEFICIENCY: Uneven and dull black coating.
RECOMMENDATION: The posts should be straightened and either cleaned and polished and protected, to let the wear of the years show, or repatinated to match the rest of the bronze. The chains should be treated in the same manner as the posts.
COST ESTIMATE: $14,200.00

ROOF	4310	Roof Surface/Cover:	Built-up

FEATURE DESCRIPTION: Built-up roof (1500 SF); includes built up roof over South portico (behind low parapet wall).
FEATURE NOTES: Building last reroofed in 1981
FEATURE CONDITION: POOR
HISTORIC RATING: N
TOTAL INVENTORY: 1500 SQ
PRIORITY: CRITICAL

DEFICIENCY: Loose and open seams.
RECOMMENDATION: Repair loose and open seams. Roofing consultant should be hired to evaluate condition of overall roofing system. Total replacement of roofing may be needed.
COST ESTIMATE *for roof replacement (Asphalt flood coat)*: Materials: $30,000 Labor/Equipment: $50,000 Total: $80,000

ROOF 4311 Roof Structure Concrete

FEATURE DESCRIPTION: Reinforced concrete roof slab over concrete beams, accessible through exterior hatch.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1500 SF

ROOF 4321 Roof Hatch Wood

FEATURE DESCRIPTION: Scuttle located in center of roof section near ladder provides access to plenum space above interior ceiling and below reinforced concrete roof slab.
FEATURE NOTES: No roof vents from plenum
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1 EA

ROOF 4323 Skylight Metal/Glass Block

FEATURE DESCRIPTION: Skylight of "pavement lights" located in center of building (240 SF)
FEATURE NOTES: Area between pavement lights & ceiling light has been boxed in with plywood & equipped with fluorescent lighting to provide uniform illumination.
FEATURE CONDITION: POOR
HISTORIC RATING: H/T
TOTAL INVENTORY: 1 EA (pavement lights - 240 SF)
PRIORITY: CRITICAL
DEFICIENCY: Corroded and damaged skylight frame with broken and loose wire glass; dirty and cracked glass block. Skylight blocked by plenum barrier.
RECOMMENDATION: Repair and resurface skylight and glassblock. Consider use

of conservation-tested glazing system for greenhouse enclosure. Remove plenum according to **Interior 4220**.
COST ESTIMATE *for replacement of skylight and glassblock*: Materials: $22,000+$5800=$27,800 Labor: $3500+$3900=$7400 Protection: $4224 Total: $39,424

ROOF 4330 Chimney Terra Cotta

FEATURE DESCRIPTION: Flue is enclosed in rear wall between windows (8 1/2"x18"), a terra cotta shaft extends above parapet
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 42 LF

ROOF 4340 Roof Flashing Built-up

FEATURE DESCRIPTION: Base flashing & counterflashing around edges
FEATURE CONDITION: POOR
HISTORIC RATING: N
TOTAL INVENTORY: 160 LF
PRIORITY: CRITICAL
DEFICIENCY: Parapet wall flashing has become detached on portion of South side.
RECOMMENDATION: Repair loose and open seams. Roofing consultant should be hire to evaluate condition of overall roofing system. Total replacement of roofing may be needed.
COST ESTIMATE: Materials: $6000 Labor: $2500 Total: $8500

ROOF 4350 Roof Drainage System Copper

FEATURE DESCRIPTION: Scuppers at roof parapet with copper leader heads and downspout above cornice, drain through cornice with copper leader heads and downspout below, cast iron shoe drains into pavement (26" high), 4 shoe drains
FEATURE NOTES: Portico has a projecting scupper on East and West sides. Basement has two floor drains and the basement stairwell has one floor drain.
FEATURE CONDITION: GOOD
HISTORIC RATING: H/T
TOTAL INVENTORY: 16 EA

ROOF **4351** **Gutter/Downspout** **Copper**

FEATURE DESCRIPTION: Copper downspouts 5"x3", 2 per side, 4 copper brackets per downspout.
FEATURE NOTES:
FEATURE CONDITION: GOOD (124LF)/FAIR (6 LF)
HISTORIC RATING: H/T
TOTAL INVENTORY: 130 LF
PRIORITY: MINOR
DEFICIENCY: Broken downspout mounting bracket
RECOMMENDATION: Repair/ reattach
COST ESTIMATE: Materials: $60 Labor: $60 Total: $ 120

GENERAL BUILDING/ SITE

See Cultural Landscape Report.

EXECUTIVE SUMMARY: UTILITIES

MECHANICAL (HVAC) SYSTEM

The building, constructed in 1911 and without any insulation, is served by a split, direct exchange (DX) air conditioning system consisting of one ten ton outdoor condensing unit connected to two 150,000 Btuh gas furnaces, twinned together. This system was installed in 1994. The furnaces, located in the basement, support a common ten ton evaporative coil, a steam humidifier, and are controlled by a single electro-mechanical thermostat which is mounted on the main level inside the historic cabin. The humidifier, controlled by humidity sensors mounted on the return air plenum in the basement, normally operates only in the winter months when cold outside air is heated to comfort levels thus reducing its moisture content to humidity levels below that required for preservation of the resource and visitor comfort. The ductwork, also installed in 1994, consists of two main supply trunks, each serving two sidewall supply registers in the conditioned space. Likewise, two return air plenums connect to large floor return grilles adjacent to the cabin. In lieu of modern registers, historic grilles, carryovers from early heating and ventilation system, are used for the sidewall air moving devices. Indications from park personnel as well as a history of temperature and humidity as recorded by a hygrothermograph, also located inside the cabin, show that the unit performs superior in temperature control and above average in the

control of relative humidity.

However, there are several shortcomings that the park emphasized during some periods throughout the seasons and under certain conditions:

1. Excessive condensation on the inside of the windows during periods of very high humidity in the summer and extremely cold days in the winter. Water is reported to actually flow down the inside of the walls.
2. Conditioned air (cold in the summer and hot in the winter) blows directly on the wall of the cabin, thus providing a threat to the stability of the park's most important resource. Also, thorough mixing with room air, which is necessary for proper air conditioning function, is also hampered in that much of the air is short-circuited into the floor return air grilles.
3. The thermostat location inside the cabin is not exposed to a representative air flow and thus may contribute to unsatisfactory temperature and humidity control. However, a study of the hygrothermograph charts indicate that temperature control is not necessarily a significant problem, although humidity control is a problem.

ELECTRICAL SYSTEM:

Electrical service is furnished to the building by an underground high Voltage primary to a pad-mounted transformer located approximately 25 feet from the East wall of the Memorial Building. The transformer and all underground primary cable is under the ownership and responsibility of the power company, Kentucky Utility (KU). The secondary service to the building consists of a set of 4/0 AWG copper condutors running underground in steel conduit to the service disconnect in the basement, consisting of a 200 Amp three phase (3 f) fused disconnect containing three 200 Amp fuses. Service Voltage is 120/240 Volts, 3 f delta with a "high leg" of 208 Volts to ground. The disconnect feeds two disconnects and one lighting panel. The first disconnect is a 100 Amp 3 f switch serving the outdoor condensing unit. The second is a 30 Amp 3 f switch which feeds the humidifier. The panel is a 125 Amp sub-panel which is protected by a 100 Amp main and serves six branch circuits: A 20 Amp circuit to each air handler, one 20 Amp circuit feeding the mechanical door opener, three 20 Amp lighting circuits, and one 15 Amp receptacle circuit. Besides the lighting in the basement, the major lighting load consists of 15- two lamp fluorescent fixtures in a cavity several feet below the upper ceiling. Although the fixtures do not have lenses, a a set of plastic panels filter the light into the Memorial Building. Most of the equipment has been upgraded over the years and is therefore in good condition. However, deficiencies and violations of the National Electrical Code (N.E.C.) were noted and are summarized below:

1. The "high leg" conductor of the three f service is required to be identified with an

orange marking, usually a plastic tape. Only the service disconnect contained markings on the high leg conductor, which consisted of three red pieces of tape. The other two disconnects were not labelled at all.
2. At least one circuit, a 20 Amp lighting circuit, used a cloth-insulated conductor which is obsolete.
3. There was evidence of moisture infiltrating the service disconnect and the trough below it.
4. The lighting panel is a subpanel which cannot have a bonding jumper between the neutral and ground buses (N.E.C. Section 250-23). However, this subpanel not only has such a bonding jumper, but neutral and equipment grounding conductors are connected to both of them in no particular fashion.
5. Splices were made inside the new lighting panel in order for the branch circuit wiring to "reach" the new circuit breakers. Splices are not permitted inside panelboards but should be placed in junction or splice boxes outside of the panel.

PLUMBING SYSTEM:

The plumbing system consists of a single water 3/4" water line which enters the basement with the refrigerant and electrical lines going out to the condenser, runs down the North wall of the basement, and terminates into a hose bibb. There are several floor drains throughout the basement floor as well, but since there is not sanitary sewer, it is assumed that they drain either into the ground or a storm sewer.

APPENDIX D

Feature Inventory & Condition Assessment - Cabin

The Traditional Lincoln Birthplace Cabin, is a round and hewn log building consisting of one room with a 3/4 height log chimey and wood gable roof. The cabin is presently housed in the Abraham Lincoln Birthplace Memorial Building and has a total floor area of 225 square feet.

EXTERIOR ENVELOPE

Walls - Ornament - Ceilings - Floors - Windows - Doors - Finishes

EXTERIOR 4111 Ext. Wall Structure: Logs

FEATURE DESCRIPTION: V-notched logs with mud chinking
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 700.0 SF

EXTERIOR 4113 Ext. Wall Trim: Mud

FEATURE DESCRIPTION: Mud chinking made from local clay fills the openings between logs
FEATURE NOTES: Quantity does not include chinking between chimney stricks
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 550.0 LF

EXTERIOR 4141 Ext. Window Frame Wood

FEATURE DESCRIPTION: one vertical timber on each side of opening held in place with wooden pegs
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1 EA

EXTERIOR 4143 Ext. Window Sill: Wood

FEATURE DESCRIPTION: Log - continuous below window opening
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 2.6 LF

EXTERIOR 4147 Ext. Window shutters: Wood

FEATURE DESCRIPTION: Three vertical boards pegged to wooden hinges which pivot on a frame pegged to cabins wall/ shutter opens inward
FEATURE NOTES: Approx. 2' 4" square. A small pivoting catch would hold shutter closed. There is no window sash, only this shutter.
FEATURE CONDITION: GOOD
HISTORIC RATING: H

EXTERIOR 4148 Ext. Window Lintel: Wood

FEATURE DESCRIPTION: Log - continuous above window opening
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 2.5 LF

EXTERIOR 4151 Ext. Door Frame: Wood

FEATURE DESCRIPTION: One vertical timber on each side of opening held in place with wooden pegs
FEATURE NOTES: 2'8" x 6'3"
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1 EA

EXTERIOR	**4152**	**Ext. Door:**	**Wood-board/bat-ten**

FEATURE DESCRIPTION: Vertical boards pegged to wooden braces and hinges which pivot on two brackets pegged to cabin/ door opens inward.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1 EA

EXTERIOR	**4155**	**Ext. Door Sill/threshold:**	**Wood**

FEATURE DESCRIPTION: Log - continuous below door opening
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 2'8" LF

EXTERIOR	**4158**	**Ext. Door Lintel:**	**Wood**

FEATURE DESCRIPTION: Log - continuous above door opening
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: H

INTERIOR ENVELOPE

INTERIOR 4210 Int. Floor Surface Clay

FEATURE DESCRIPTION: Smooth clay surface made from clay and white glue/ surface has natural cracks.
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: T
TOTAL INVENTORY: 170 SF

INTERIOR 4218 Int. Fireplace Brick

FEATURE DESCRIPTION: Flate board mantel supported by two pegs in log above fireplace.
FEATURE NOTES: The firebox is lined with stone and mud to a height of 55'-0"
FEATURE CONDITION: GOOD
HISTORIC RATING: H
TOTAL INVENTORY: 1 EA

ROOF

GENERAL 4310 Wood-shingle: Wood

FEATURE DESCRIPTION: Wood shingle roof held in place by overlaying poles with blocks between/ shakes are approx. 36" long
FEATURE NOTES: **HSPG091:** Cleaning and Maintaining Wood Shingle Roofs (see PDF file for printing)
FEATURE CONDITION: GOOD
HISTORIC RATING: T
TOTAL INVENTORY: 3.0 SQ

GENERAL	4311	Roof Structure	Wood frame

FEATURE DESCRIPTION: Five poles spanning between end walls.
FEATURE NOTES:
FEATURE CONDITION: GOOD

GENERAL	4330	Chimney	Brick

FEATURE DESCRIPTION: Three-quarter height chimney (approx. 8'-6" high) of log, sticks and mud/ back of chimney is 5 logs with sticks above.
FEATURE NOTES:
FEATURE CONDITION: GOOD

UTILITY SYSTEMS

EXTERIOR	5420	Primary Elect. Dist. System

FEATURE DESCRIPTION: Three (3) switches near floor below cabin window control lighting in Memorial Building- one (1) duplex on floor and two (2) inside fireplace.
FEATURE NOTES: Thermostat mounted on cabin wall between door and window controls HVAC for Memorial Building
FEATURE CONDITION: GOOD

FIRE/LIFE/HEALTH SAFTY

FIRE SAFTY **4711** **Means of Egress:** **N/A**

FEATURE DESCRIPTION: Cabin is not open to the public/ one door provides access
FEATURE NOTES:
FEATURE CONDITION: GOOD
HISTORIC RATING: T
TOTAL INVENTORY: 1 EA

APPENDIX E

Curatorial Assessment & Recommendations

The following assessment and recommendation is derived from the ABLI Collection Management Plan - 1992, Collection Condition Survey, and the HSR Assessment Team.

ABLI Collection Overview

The museum collection at ABLI numbers 466 objects. The majority consists of archival/photographic objects, which are kept in storage. Two of the objects on exhibit embody primary importance to the park: the Traditional Birthplace Cabin and the Lincoln Family Bible.

The Traditional Lincoln Birthplace Cabin is a one-room structure made primarily of white and red oak with clay chinking. The history of the cabin prior to 1860 is unsubstantiated, however after 1860 it was dismantled and reerected at several locations before being purchased and returned to the vicinity of the point where Thomas Lincoln built his log home in 1808. The Lincoln Farrm Association (LFA) returned the cabin for the sole purpose of

erecting a memorial to Abraham Lincoln. To build this memorial they raised funds, on a national level, and kept extensive records of all donations. The new memorial building did not sufficiently house the cabin and the cabin was cut off approximatly 4"-0" in one direction and 1'-0" in the other. None of the chinking is original. Recent improvements in security procedures and environmental standards follow the Regional Curator's recommendations made in November 1986.

Condition Assessment

The cabin in general is in good condition. However the lack of baseline photographic documentation makes a detail assessment of ongoing deterioration difficult. Vandalism by park visitor appears to be the primary cause of the loss and damage of historic fabric.

Control of temperature and relative humidity levels inside the memorial building has been a recognized, long-standing problem. This is a monumental problem, both from a technical standpoint and from a esthetic standpoint. The decision to place the log cabin inside the memorial building was beneficial in that the cabin is well protected from the majority of the outside elements. The downside of this is that the design of the memorial building presently does not allow for an "air-lock" for visitors entering the building. Thus, every time a door is opened the temperature and the relative humidity fluctuates. The attempts to alleviate temperature and relative humidity fluctuations by the installation of an Armstrong control system have not worked as expected. It appears that the humidistat (located in the basement) is reading the relative humidity of the basement area, not the memorial room where the cabin is located. It is recommended that the control humidistat be moved to the upper level inside the building " recommendations in the instruction manual p.9, "The control humidistat should be located where it will be exposed to the average air condition of the space to be humidified". Because the sensor unit has been installed in the basement this system is not reading the temperature and relative humidity in the desired area.

Only the interior of the cabin is being environmentally monitored with a hygrothermograph. From January 1 until June 14, 1987, the instrument was located in the front of the cabin. See Table I for a month by month analysis of the readings.

APPENDIX E

Table 1: Synopsis of Environmental Monitoring by Month

Month	Temperature (°F)	Relative Humidity
JAN	Relatively stable around 68° during the hours the building was closed.During operating hours there were eight days of serious fluctuation (from 66° to 80° then back down to 68°)	
FEB	First half of month repeated the Jan trends. Last half leveled out during operating hours. Most variation around 7th-8th with a 22 degree difference over 24 hrs.	RH showed the greatest variation during hours of operation. There was a gradual increase overall during the month from about 40% to 50% by end of month.
MAR	Leveled out at around 70°.Greatest variation came around March 10 when it dropped to 57° just before opening. Opening hours showed greatest variation.	There was generally a 10% difference on a daily basis. First half of month between 35% and 45%. Last half of month between 40% and 50%.
APR	Stabilized around 70°.	First half of month fairly stable around 45%. Greater variation the last half of the month topping 65% on two occasions.
MAY	Remained fairly stable with a gradual rise from around 70° up to about 76° around May 16, 19, 24, and 30.	Great fluctuations including a 15% drop over a 12 hour period from 72% to 55%.
JUN	Fairly stable around 72°.	Great variations especially over 60 hour period June 14, 15, and 16 when RH was fluctuating 10% hourly, while the overall reading was rising from 49% to 72% then back to 49%.
JUL	Fairly stable around 72-74°. Between 72° and 78°.	Fluctuated between 50% and 70% until mid-month when it leveled out around 50%-55%.
AUG	Between 72° and 78°.	In the 50%-60% range most of month. Almost on a daily basis it would rise above 60% usually during day. Last week leveled out.
SEP	Stable around 76° falling to about 70° by month's end.	In the 50%-60% range, going over 60% first & last weeks of month.
OCT	Fairly stable around 74°.	Stable between 40% - 50%.

Special Directive 80-1 (Revised 1986) identifies the recommended temperature and relative humidity (RH) levels as: "In exhibit and storage spaces, where comfort of people is a factor, the recommended levels are 18-20°C (64 - 68°F) ... Relative humidity is one of the most important environmental factors to control. It is also one of the most difficult. . . Ideally fluctuations should not exceed ±3% RH per month. . . Relative Humidity levels are maintained below 65% RH to reduce the potential for mold." Monitor for a minimum of one year before setting target temperature and relative humidity settings. Highs and lows for each month are included in Table 2.

Table 2: High and Low Temperature (°F)

Month	High Temp.	Low Temp.
January	82	58
February	82 60	55 32
March	73 57	59 33
April	72 63	66 37
May	74 64	71 48
June	77 67	72 45
July	78 68	71 46
August	78 ?	66 46
September	78 68	66 49
October	76 72	65 40

The memorial building has a humidifier on the heating system.

On November 18, the exhibit areas were monitored for both ultraviolet light and for visible light intensity as measured in footcandles.

Environmental Conditions and Monitoring Recommendations

1. Purchase a minimum of one hygrothermographs to monitor the memorial building. Manually-read instruments, such as thermohygrometers work equally well but must be monitored daily to get complete readings.
2. Investigate a climate control system for the memorial building in order to control fluctuations in temperature and relative humidity. The installation of any extensive system would involve the expertise and assistance of regional architects, engineers, and curators. Base the building's needs on the established baseline data of temperature and humidity gathered through environmental monitoring. The analysis of environmental data shows a great deal of seasonal variation of temperature and relative humidity. However, some stability exists in April. This may be due to changes in operating procedure: limiting the number of persons allowed in at one time, keeping the door closed, etc. During summer months the temperature remains high, partly as a result of heavy visitation and the frequent opening and closing of the door. Excessive heat in the winter drastically lowers the 23 relative humidity. For hygroscopic materials, such as chinking and plaster, this proves disastrous. The practice of

opening the doors on "nice" days defeats the purpose of an HVAC and humidification and/or dehumidification system. The added fluctuations this creates makes the system overwork to compensate. The same is true if the systems are shut off at night, fluctuations will still exist.

3. Institute an Integrated Pest Management Program using the guidelines in the NPS, Museum Handbook, Part I, Chapter 5, Biological Infestation. At one point, wood weevils were noted in the cabin, treated, and have not retured. The cabin was monitored for pests by a park ranger who worked at the park from 1989 until 1991.
4. Inspect the cabin chinking regularly and note/photograph any damage. Differentiate between environmental damage and vandalism.
5. A large photograph of each side (inside and outside) of the cabin should be made to provide baseline information to monitor loss and damage of historic fabric from environmental conditions and vandalism. When taking this photograph the distance from the wall, the height of the camera, and the lens used should be noted. On these photographs grids should be made. Each section of the grids should be numbered. Each grid section should then be rephotographed in detail with the grid number, a measuring stick, and date in the photo. If there are cracks, holes, mud dauber nests or any other defects, these should be documented in writing. It is suggested that a notebook be maintained with an individual page(s) for each grid section. Each section should contain the first photograph with a written description of all defects and measurements. Additional photographs and comments should be attached as monitoring proceeds. It is very important that relative humidity and temperature logs be maintained and correlated with the photographs. As or when changes occur in the building they should be noted in the documentation. It should be remembered that most changes in cracks (their width) will not occur at exactly the same time as a change in the temperature and relative humidity. They usually will take some time to evidence themselves.
6. Attempt to maintain light levels to a maximum of up to 300 lux (30 footcandles) as per the recommended light levels (visible) found in Special Directive 80-1 (Revised 1986).
7. Cover fluorescent tubes with ultraviolet sleeves. Install warm white fluorescent bulbs in all fluorescent fixtures. Refer to Conserve 0 Gram 3/4, "Light Filtering Screens".
8. Contact the manufacturers of the UV film used in the memorial building to ascertain the amount of UV the film can block. UV readings have been reduced to 50 to 66, but the film or installation may be defective.
9. Monitor light and temperature/humidity quarterly. Use the environmental monitoring kit distributed from the Southeast Regional office.

Curatorial Assessment & Recommendations -Amendment-

Editor's Note

On June 2, 2000 SERO Chief Curator Allen Bohnert visited the Memorial Building. The primary purpose of the trip was to consult with SERO Cultural Resources Historical Architects and park staff on the treatments proposed for the Memorial Building and the approaches taken to preserve the traditional Lincoln Birthplace Cabin. These comments from his trip report serve as an amendment to the earlier recommendations made by

Historical Architects, Park Staff, and I discussed several preservation-related concerns and treatment proposals being discussed in the Historic Structures Report for the Memorial Building. While in the Memorial Building we looked at the HVAC system, modern doors, the Ultra Violet (UV) light filtering film applied to the glazing, the corrugated acrylic panels added to the ceiling/skylight, and the interior plaster design details obscured by several coats of paint.

The park's Conservation Survey described the building's humidity control system as if it was operating based upon the humidity levels in the basement area of the building. However, while the mechanism controlling whether or not the humidity controls are engaged is in the basement area, the sensors are in the air ducts and monitoring relative humidity levels in air from the exhibit space and not the basement. It appears as if the Conservation Survey includes inaccurate statements and incorrect assumptions about the building's HVAC system. Another aspect of the HVAC system we discussed is the

proximity of the conditioned air vents to the return grills. We discussed the possibility of installing louvers in both grills to direct airflow away from the return vents and to draw air into the return ducts 'away from' the conditioned air vents.

Concerns have been expressed about visual intrusiveness of the modern aluminum/glass doors. The original bronze doors reflect the monumental qualities of the building and are highly decorative. Replacing existing glass doors and aluminum framing elements is advisable. If the original doors are not going to be used and doors/framing recommended for installation that do not visually disrupt the building's esthetic, it should be possible to use frosted glazing or glazing with surface characteristics the both eliminate UV light and reflective glare.

The extant UV filtering film on the windows is tinted and clearly it can be replaced with clear UV filtering film. It will be advisable to determine how difficult it will be to remove the existing film and adhesive. Removal of such films may or may not be a complicated and difficult undertaking. Light levels entering the building through the windows will not adversely effect the cabin, and the UV filtering material does not need to reduce visible light to protect the cabin. There may be other reasons, such as heat build up in the building, to use a film that, while not colored, reduces the amount of visible light (radiant energy) entering the building. However, the window grates undoubtedly already help to sufficiently reduce light levels.

The removal of corrugated acrylic panels from the skylight area and replacing with frosted acrylic panels should be fine. It will be necessary to ensure the new acrylic panels eliminate UV light. The need to take every precaution to ensure no the cabin is not damaged while any of the above work, including removal of over painting on plaster design elements and the removal of the simulated clay floor inside the cabin, is well understood. Medium format photographs were taken of the cabin to provide comprehensive detailed photographic documentation of the cabin's condition. This will essentially serve as 'baseline' condition data or documentation and should be included in the park's archives.

APPENDIX G

Historic Paint & Finishes Study

EXECUTIVE SUMMARY

The purpose of this paint and finishes study is to provide information about the sequence of paint and finishes on the interior of the Abraham Lincoln Birthplace building for the Historic Structure Report. No paints were found on the exterior, but the study does discuss the evidence of other finishes which were found on the bronze doors, door frames, vent grilles, and commemorative plaques.

In addition, the condition of all painted and finished surfaces was examined. The problems found are discussed, with general recommendations for remedying them. Underlying causes of actual or potential paint failure, such as failure of skylight flashing or lathing attachments, were not investigated as part of this paint study.

Site investigation was carried out over two days, October 16 and 17, 1998. Laboratory work was done from October 18 through October 20. The site investigation, paint analysis, and report preparation was done by Sara B. Chase, Architectural Conservator, of Lexington, Massachusetts. Assistance was provided on-site by Tammy McKinney, Jenny Jones, and Gary Talley, Acting Superintendent.

PAINT AND FINISH HISTORY SUMMARY

The structure which houses the Lincoln Birthplace cabin has only painted plaster and bronze as substrates for applied finishes. None of the architectural elements are made of wood.

PAINTED PLASTER

Built in 1909, it has been painted over its entire painted surface seven times. A few areas show fewer layers of paint. That is due to repair/replacement of plaster in those places. All of the paints are oil paints; some appear to be matte and other have a higher gloss level but none higher than "satin."

The predominantly blue color scheme is not original. The original paints had soft light gray and grayed cream hues--often termed "stone" colors. Evidence from work files on site indicate that the blue color scheme was first used in the extensive 1959 work, and has been repeated in subsequent interior paint jobs.

It is possible to conjecture that the building was painted at roughly these times:

-1909: original finish
-1933: NPS is given responsibility for building
-1944(?): some intervening time prior to 1959
-1959: documented painting and color schedule
-1977: documented painting
-1983: documented painting
-1995: documented painting

The samples with the greatest number of layers had seven layers of finish paint. The more recent four layers had blue tints. None of the three earlier layers found were blue. All paints were matte. There was evidence of a thin oil glaze over some dirt particles on the first and second layers.

It is reasonable to speculate that the original painted surfaces were given a thin coat of linseed oil in order to make them look better (at least shinier and less dull) when ownership of the building was transferred from the private group to the federal government in 1916. The second application of a thin coat of linseed oil over paint with microscopic dirt particles randomly distributed on its surface might have been done sometime between 1933 and 1959. If, as conjectured, the building was painted in c. 1944 or 1945, the surface of the paint might have been "refreshed" with a thin coating of linseed oil prior to the 1959 work.

BRONZE

The bronze window frames, door frames, doors, and exterior plaques have a dull black-colored coating, partly worn off in some areas, which is not original. It covers

the original patination which appears to have been a warm brown, with slightly reddish tones. The bronze wall grilles are somewhat worn but mainly have their original soft gold-colored finish. The cellar door is kalemein-clad. Correspondence and other documents on file at the site confirm that substantial reconditioning work was done on the bronze doors in 1959.

CONDITION SUMMARY

PLASTER

Two problem conditions were seen over all painted surfaces:

a) poorly executed plaster repairs
b) spray-applied and brush applied "skim coat" thick coating which has left drips and a very rough texture showing on the painted surfaces.

On some of the moulded areas, the thick "skim coat" build-up is not well adhered to the underlying surface. The drips from the downward curving tips of the rosettes look almost like stalactites in most coffers. The overall effect of the thick, sprayed-on material is to reduce the original clean lines of the plaster trim work. What was very likely intended to look like cut stone now looks softly rounded at all edges. Photographs show many areas where moulding profiles were apparently repaired by hand-forming rather than by use of a template and "horse."

In addition, there is some evidence of slow but steady water penetration. At the southeast corner and in several places along the west (from south to north), the flat ceiling areas have small colonies of some species of whitish and blackish mycelia growth. In the southeast corner there are also the small rust-colored dots and long almost microscopic cracks in the painted surface which suggest that water is slowly seeping in from above and gradually evaporating on the ceiling surface. These only appear on flat areas, not on the coffer rosettes.

PAINT

The present paint color scheme is not the original color scheme. So far, no paint specifications by architect John Russell Pope have been found, but the paint evidence shows that the original intent was for the paint to have nearly neutral tones of the so-called stone colors. "Picking out" was subtle and minimal; the trim color was close to the wall color; the rosettes were a little deeper in tone.

BRONZE

The primary condition to be remedied on the bronze doors, door frames, window frames, stanchions and chains, and exterior plaques is the removal of the uneven and dull black coating. There is also some corrosion occurring on the exterior commemo-

rative plaques. The nearly uniform verdigris corrosion on the exterior vent grilles is acceptable and could be stabilized "as-is."

TECHNIQUES OF ANALYSIS

The first step in examining painted finishes is to determine the layer sequences-the chromochronologies of each architectural feature. The challenge of taking samples of brittle plaster on which enough paint remained attached to substrate to allow for cross-sectioning was extreme. Thus, in order to minimize the destructive part of the sample taking, most samples here were taken with a NO. 18 blade X-acto knife down only to the original sealer coat on the plaster. Each sample then had to be carefully wrapped before it was placed in a coin envelope and then in a hard case for transportation to the laboratory.

Observation and sampling was done from two platforms on a rolling stage, erected to give access to the ceiling and the tops of the window trim.

The stage was rolled to each of the four comers of the chamber. In the northwest comer, the present park ranger's desk had to be moved. Thus, the ceiling, walls, picture rail moulding, and window trim were examined and sampled in areas where the removal of material was not immediately evident to visitors. Only a few confirming samples were taken lower down.

The number of areas cut into with the X-acto knife was not counted. The number of samples studied in the laboratory was 20.

Lights were provided on site, using a 75 watt photo-reflector flood. All areas were examined using a lOx. Hasting triplet lens and a 3x visor, as well as a 24x Zeiss binocular lightweight microscope in the field. In the laboratory, examination was done using a Nikon s-10 stereozoom binocular microscope and two arm fiber optics light source. The microscope objective was covered with a daylight blue filter to correct for daylight color rendition. The bench mounted microscope has objectives which have a range from 40x to 200x.

Cross-sectioning in the conventional manner was not possible due to the friable plaster substrate and the brittle paint layers. Thus, where layers did adhere to each other, cross-sections were carefully cut with the scalpel blade after the samples had been embedded in a hard paraffin base. (This is a technique used some years ago at the NPS laboratory formerly located in Building 28 at the Charlestown Navy Yard and now at the Boott Mill in Lowell, Massachusetts. It is still useful.)

On samples where original paints were found, the original layer was exposed to UV light in a controlled setting for 48 hours. Because there was an oil medium, there was some reversing of the normal yellowing of linseed oil, but not as much as had been expected. This suggests that the original paints may have had a binding medium which was part linseed oil and part protein (hide glue), which does not yellow. That

oil in the paint

may have been done to promote greater color stability (i.e., lack of color shift in the more shaded areas due to less exposure to natural UV from the skylight and side windows).

No good photographs showing the interior prior to the three-color blue scheme were seen at the site. However, the site staff were very helpful in bringing out and going through folders documenting work done as far back as 1959, with some mention of paint in the 1940's. Other than that, the 1959 and post-1959 documentation is very clear and even includes paint chips from the Pratt and Lambert paint formulation-no pigments called out, but the bases and tint numbers of the paint company listed.

INTERIOR FINISHES--HISTORY

The dates assigned to the painted finishes are based on documents which clearly confirm work done from 1959 to the present. The dates assigned to the painted finishes prior to 1959 are based on informed conjecture. In 1933, for example, responsibility for the building was transferred from the U.S. War Department to the National Park Service. If the building had not been repainted inside in 1916, when the private owners gave the building to the federal government, then we may reasonably assume that the Park Service did paint work sometime around 1933.

FIRST PERIOD: 1909 - c. 1933

The cornerstone was laid in 1909. Probably the first finish paint was not actually applied until 1910, or even 1911, closer to the opening date.

Floor/Wainscot:

The terrazzo floor and Tennessee marble floor border and wainscot were highly polished. The terrazzo and marble of the interior appear to have continued to be polished. However, as the conditions statement notes, the application of abrasive cleaners and possibly of some synthetic protective coating has left the marble with a dull surface. The floor is probably protected and polished by use of hard wax. The walls above the wainscot were painted with a soft light gray matte oil paint.

Neck, Trim, and Cornice Mouldings:

The neck moulding (not quite a picture rail) and the cornice moulding were a slightly lighter gray. Only the cornice elements and narrow neck moulding were picked out.

Ceiling:

The ceiling was a very slightly rosy off-white. All elements of the ceiling except the rosettes in the centers of the coffers were painted the same color. The rosettes were painted a slightly deeper tint of the very slightly rosy off-white.

Bronze:

The bronze doors and frames, window sash frames, and stanchions appear to have had a warm reddish brown patina. The wall-mounted grilles and possibly the stanchion chains were a warm yellow gold color, apparently with a thin light brown shellac or varnish over bright metal.

SECOND PERIOD: c.1933 - c. 1944

This date was selected because it marks the transfer of responsibility for the Monument to the National Park Service. It is reasonable to speculate that after twenty-four years the interior would need to be repainted.

Some time prior to the second repainting over the entire painted portion of the interior, a thin layer of clear linseed oil was applied over the original pale soft paints on the walls and ceiling. Because the oil yellows over time when not exposed to UV light, that initial light soft bluish gray of the walls now looks very slightly greenish, as does the cornice and ceiling. The next was not a monochrome over the entire painted portion of the interior.

Walls:

The paint was a slightly darker gray on the walls.

Neck, Trim, and Cornice Mouldings:

The mouldings were painted a lighter gray color -- the same tint as the original wall color.

Ceiling:

The ceiling was painted a soft cream color. All ceiling elements appear to have had the same paint.

Bronze:

Neither documentation nor physical evidence give information about any treatment of the bronze elements of the interior at this time.

THIRD PERIOD: c. 1944 - 1959

Without documentary information it is not possible to date the paint layer which was applied some time after c. 1933 but prior to 1959. The 1959 shift to an interior color scheme which included three shades of blue paint is well documented. Three Finish paint layers lie beneath the blues. There is no evidence of water-base paint having ever been used on this interior, and so the first paint layer on undisturbed original

substrate may be designated as the original finish paint. The argument for supposing that c. 1933 is a reasonable date for the seco finish layer is stated above (Second Period...).

The walls were painted a pale soft cream color, with a very slight gloss, not totally matte.

Neck and Cornice Mouldings:

These mouldings were ivory, again, not totally matte.

Ceiling:

The ceiling was also a cream color.

On the comers of the outermost flat band of trim moulding, the piece which returns to the wall, on two windows on the east wall and one on the south wall, there was a distinct medium reddish brown paint. A photomicrograph of one of these samples is attached to this report. The two earlier paint layers lie under it, and the blues (with white primers) lie on top of it. Perhaps it was scraped off from most of the window trim moulding areas because it was deteriorated and/or loose.

FOURTH PERIOD: 1959 - 1977

The 1959 paint scheme is well documented, as are the next three after it. Physical evidence in the building confirms the documents. In a letter to "Regional Director, Region One" dated February 3, 1959, Ernest L. Wright, Jr., Superintendent of the Abraham Lincoln NHP stated,"A well know (sic) Plasterer and Decorator were brought in for consultation on this work ('repairing the Memorial Building interior') and are in agreement as to how it should be accomplished." On the second page of that document Wright stated, " This sketch shows three different colors to outline the various mouldings and features of the walls and ceiling." The sketches, actually scale elevations and a reflected ceiling plan, are not the only evidence of that first blue color scheme; actual color chips of the Pratt and Lambert paints used are on file.

The walls are painted " 'Silver Blue' - a mixture of 1 part 'Delft Blue'and 2 parts 'White.'

All trim mouldings:

The mouldings (neck moulding, door and window trim, panel mouldings) are painted "' Fresno Blue- - a mixture of I part 'Delft Blue' and 4 parts 'White.'

The ceiling is painted with both Silver Blue and Fresno Blue, the lighter of the two used on the rosettes and flat coffer bands, and the slightly deeper hue on all the rest

of the ceiling, except for the flat recessed bands between the flat coffer mouldings. Those are painted "Delft Blue - a standard color."

FIFTH PERIOD: 1977 - 1983

The 1977 paint schedule repeats the 1959 paint schedule.

SIXTH PERIOD: 1983 - 1995

The 1983 paint schedule repeats the 1959 paint schedule. There is one significant coating added over the entire interior surface beneath the paint at this time. A thick white material somewhat like joint compound appears to have been sprayed over the entire building. The fact that it was sprayed is quite evident in the drips which hang like nascent stalactites from the tips of the downward curved petals of the rosettes. The thickness of the coating is evident in the brush marks it holds on all cornice mouldings.

SEVENTH PERIOD: 1995 - present (date of inspection 1998)

The 1995 paint schedule repeats the 1959 paint schedule.

APPENDIX G

HISTORIC PAINT SCHEDULES

Unless otherwise specified, all Munsell colors are from the Nearly Neutral color book. These colors provided the best matches and are all matte, as are the historic paints in the Abraham Lincoln Memorial building.

FIRST PERIOD: 1909 - c. 1933

WALLS	TRIM MOULDINGS	CEILING	ROSETTES
5Y 8.5/0.5	10YR 8/2.0	10YR 8.5/1.0	10YR 8/2.0

Note: A thin layer of linseed oil was applied over this paint at some time. There are microscopic dirt particles which appear to be beneath the oil, indicating that the paint had been in place long enough to accumulate some dust before the oil was applied.

SECOND PERIOD: c.1933 - c. 1944

WALLS	TRIM MOULDINGS	CEILING	ROSETTES
5Y 9/3.0	5Y 9/2.0	10YR 7.5/2.0	10YR 7.5/2.0

Note: There are traces of a medium reddish brown paint on the flat outer edges of the window and door trim moulding in at least three different places (top corners). That paint appears to have very small sand grains in it. There is not enough evidence to draw conclusions about its use in an overall color scheme.

THIRD PERIOD: c. 1944 - 1959

CEILINGS	TRIM MOULDINGS	CEILING	ROSETTES
5Y 8.5/1.0	10YR 8.5/0.5	5Y 9/0.5	5Y 9/0.5

Note: This paint layer, like the First Period paint, also has had a thin linseed oil applied over it, with some signs of microscopic dirt or dust under the oil.

FOURTH PERIOD THROUGH EIGHTH PERIOD: 1959 - PRESENT

WALLS	TRIM MOULDINGS	BANDS	CEILING	ROSETTES
5B 8/1	5B 9/1	5B 5/2 *	5B 9/1	5B 8/1

Note: Commercial Pratt and Lambert/custom color chips are on file for these three colors at the Abraham Lincoln Memorial Visitor Center.

*5B 5/2 is one of the regular color series, *not* a Nearly Neutral.

APPENDIX G

EXISTING CONDITIONS OF INTERIOR & EXTERIOR FINISHES

The following conditions were observed during the site visit of October 15-17, 1998. Photographs show typical view of most of the problems. General recommendations are included with the statements of conditions. However, the white and black mycelia webs do not show in the photographs. It proved impossible to collect samples in coin envelopes because the exceedingly fine mycelia simply disintegrated. Thus, they could not be brought to a higher power microscope to determine if there were any spores formed. It is possible that they are simply the remains of previously active growths. Still, they should be examined in situ by a knowledgeable scientist.

INTERIOR

Walls:

On the north walls there is plaster covering the areas where four marble plaques were installed originally. The plaster covering was applied in the 1959 work. It seems to be intact, but perhaps with a rougher texture than the walls originally presented. Wall areas on all four sides above the neck moulding are, *except* where patched, smoother than the north wall. Photographs show where various cracks seem to be worth monitoring.

Cornice and neck moulding:

The cornice and neck moulding have been patched and repaired repeatedly. In some areas, only the paint layers reveal that work has been done but in many other areas, especially in the northwest, northeast, and southeast comers (where water damage may have been most devastating and frequent) the repair work is clumsy. Profiles were not run using an accurate template mounted on a "horse" in the craftsmanlike manner.

On cornice and ceiling along the south wall, especially at the southeast corner, there is fine white mycelia growth. Some colonies are in circles; others are growing along hairline cracks in the paint. In addition, there are small dots or "freckles" of rust stain, condensation droplets, indicating that water is migrating over metal work somewhere. The growth continues along the west wall, and in the northwest comer. There is also a hairline crack from the southwest corner ceiling coffer down through all of the cornice to the wall. It does not show up in the wall plaster, however. It was interesting to notice that "stalactites" of dissolved and redeposited soluble salts were clearly visible on the column capitals at the south east and south west exterior corners of the building. The same sort of material was evident on the stone at the base of the southeast corner column.

Window and door trim:

These mouldings are sound for the most part. However, like all of the neat and trim original moulding profiles which exist, they have been compromised by the thick spray coating which underlies the 1983 paint job. A good metaphor for their appearance is "like melting ice cream." All crisp clean profiles have been muted.

On much of the trim and mouldings mentioned above, the paint build-up and/or the thick coating under it has blistered. When the building is repainted, and loose material is removed, it will be difficult but very important to have surface preparation done which carefully removes all unevenness--i.e., sand down the edges where heavy build-up meets bare substrate.

On the high window sills on the south wall, and on the southern window sills on the west and east walls, there are signs of condensation. Long drip marks show that water condensed at the upper end of the sloped sills and then ran down.

Ceiling (all elements except skylight frame):

A few fine hairline cracks exist in the ceiling, but do not seem to be in a pattern which indicates dangerous conditions at this time. Mapping and monitoring and recording them in a regular and systematic manner would be a good idea, however. The thick spray coating mentioned above ("Window and door trim") has gathered in drips at the ends of all downward curving points on the rosettes. While this is not a condition that endangers the plasterwork and probably is not noticed by visitors to the building, it nevertheless adds to the general degrading of the original well-defined surfaces, mouldings, and details of plasterwork on the interior.

Bronze sash, doors, door frames:

These elements all have a dark coating over the original warm light slightly reddish-golden brown patina. On the doors the coating is wearing off to show dull yellow bronze in various areas. It may be that an oil coating was applied at some point, after a protective coat (acrylic?) began to wear off.

It would be good to restore the original appearance of the bronze. As a contributing element, adding the warm and rich look of patinated bronze, not a dull blackish mottled surface, would enhance the interior's aesthetic dignity. The dark coating could be removed, especially where it is most heavily built-up.

Bronze wall grilles:

These are dull and dirty. Cleaning and polishing them would restore their original look.

Bronze stanchions and chains

These seem to be the original stanchions and chains. They are part of the architect's design intent. The posts should be straightened and either cleaned and polished and protected, to let the wear of the years show, or repatinated. to match the rest of the bronze. The chains should be treat in the same manner as the posts.

Miscellaneous items:

The marble throughout the interior shows various signs of damage and unsightliness. The baseboards are gouged and scraped by the hubs and brakes of staging rolled along, possibly by floor waxing machines. The wainscot and door trim is dulled by the general wear of time, perhaps by some slight air pollution, by coatings (brush marks can be seen when a raking light is used in many areas). The floor wax has splashed up on the marble wainscot.

It would be good to clean and repolish the marble. The deeper scratches and gouges would have to be honed out before repolishing.

After repolishing, no protective coating should be applied. Rather, the marble should simply be cleaned with a mild detergent (or a conservatorial non-ionic detergent) and water, dried with a chamois cloth, and if necessary, buffed with a lambswool buffer to bring up the polish again. Keeping the light level low is necessary to preserve and prolong the life of the logs. Elevating interior illumination a little by brightening the bronze and polishing the marble would add to the aesthetic of respect the interior design inspires.

It is interesting to try to imagine what the light stone colors would contribute to the interior's appearance. It is also intriguing to factor in the use of an oil "glaze" on the stone colors, which would give more reflectance. Such a treatment was in effect during two different times in the history of the Memorial Building.

No painted surfaces were found on the exterior walls. The skylight was not examined as access to the roof was restricted.

Bronze plaques at the north (ADA) entry:

These two plaques are now black with corrosion showing in a few areas. They should be cleaned and restored by a metals conservator. Special care should be taken to preserve the original texture of the metal ground behind the lettering.

Bronze vent grilles:

These have a fairly uniform coating of verdigris corrosion. At this point, they could be gently cleaned and the verdigris left in place. There does not appear to be significant or rapid deterioration.

EXTERIOR

No painted surfaces were found on the exterior walls. The skylight was not examined as access to the roof was forbidden.

Bronze plaques at the north (ADA) entry:

These two plaques are now black with corrosion showing in a few areas. They should be cleaned and restored by a metals conservator. Special care should be taken to preserve the original texture of the metail ground behind the lettering.

Bronze vent grilles:

These have a fairly uniform coating of verdigris corrosion. At this point, they could be gently cleaned and the verdigris left in place. There does not appear to be significant or rapid deterioration.

All of the following photographs were taken by Sara B. Chase. All except the photomicrographs were taken on site at the Abraham Lincoln Memorial on October 16 and October 17, 1998.

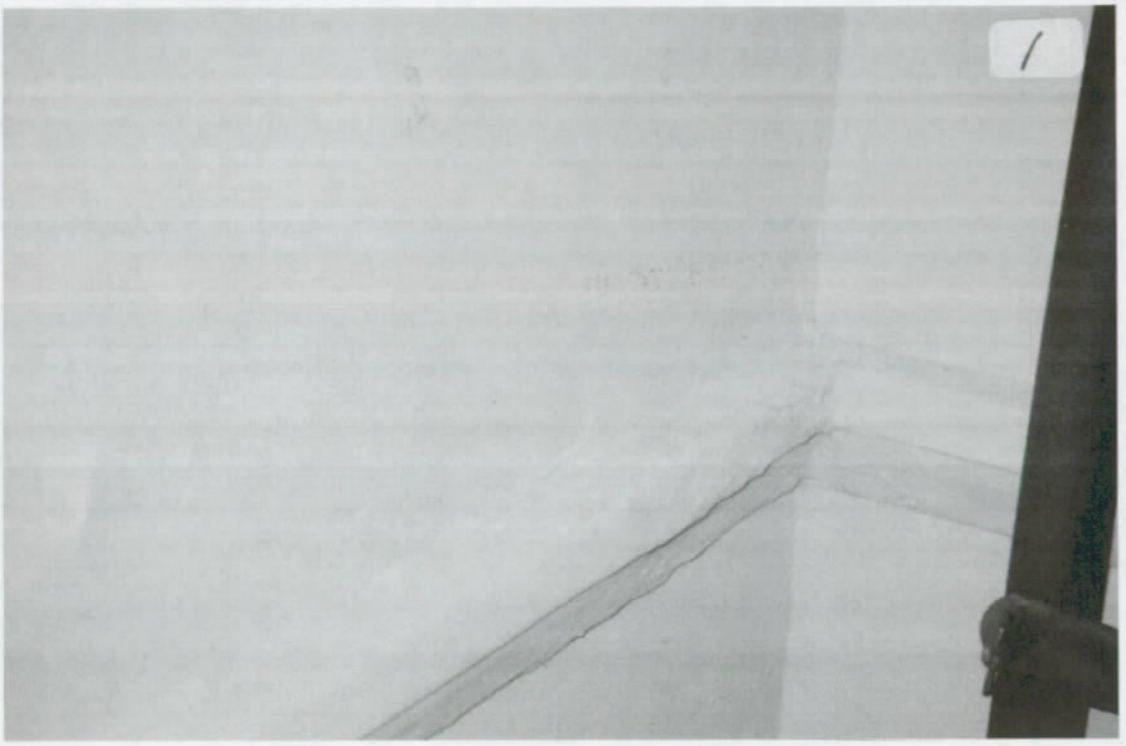


Figure 1. View of picture moulding repair work in the northeast corner. Note poor resolution of profile.

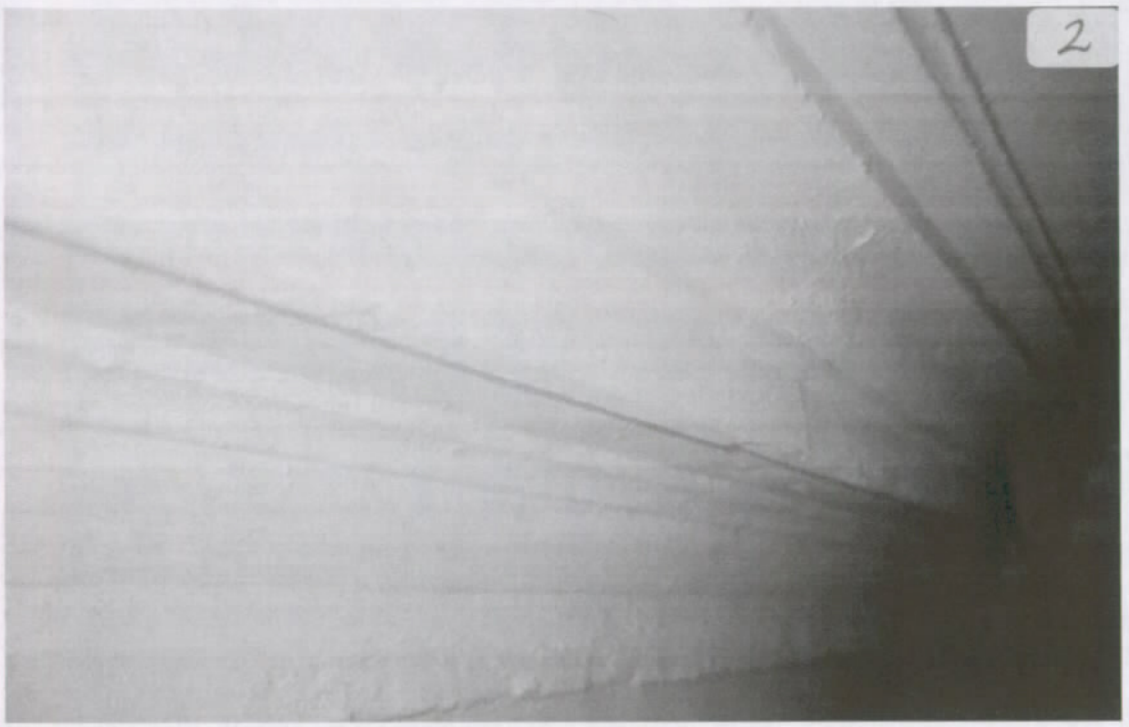


Figure 2. Cornice repair work along the north wall. Again, note poor repair of moulding profile.

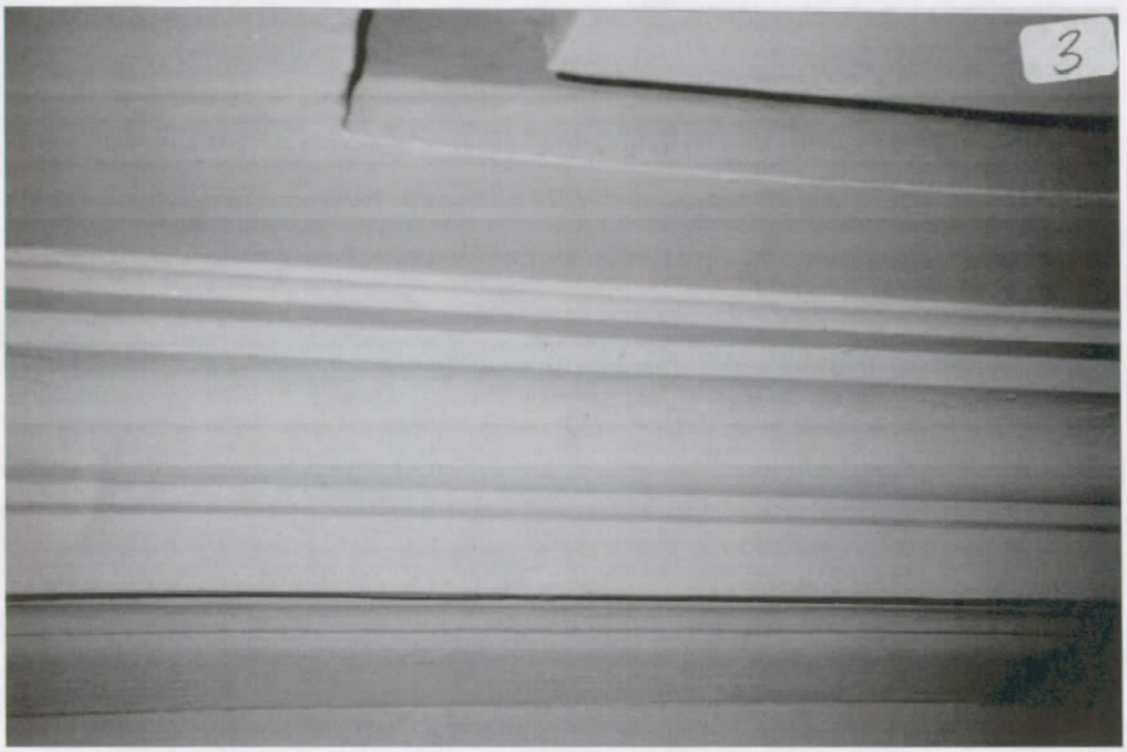


Figure 3. View of crisp profile of cornice which has not been repaired, or, if repaired, was done using a proper template.

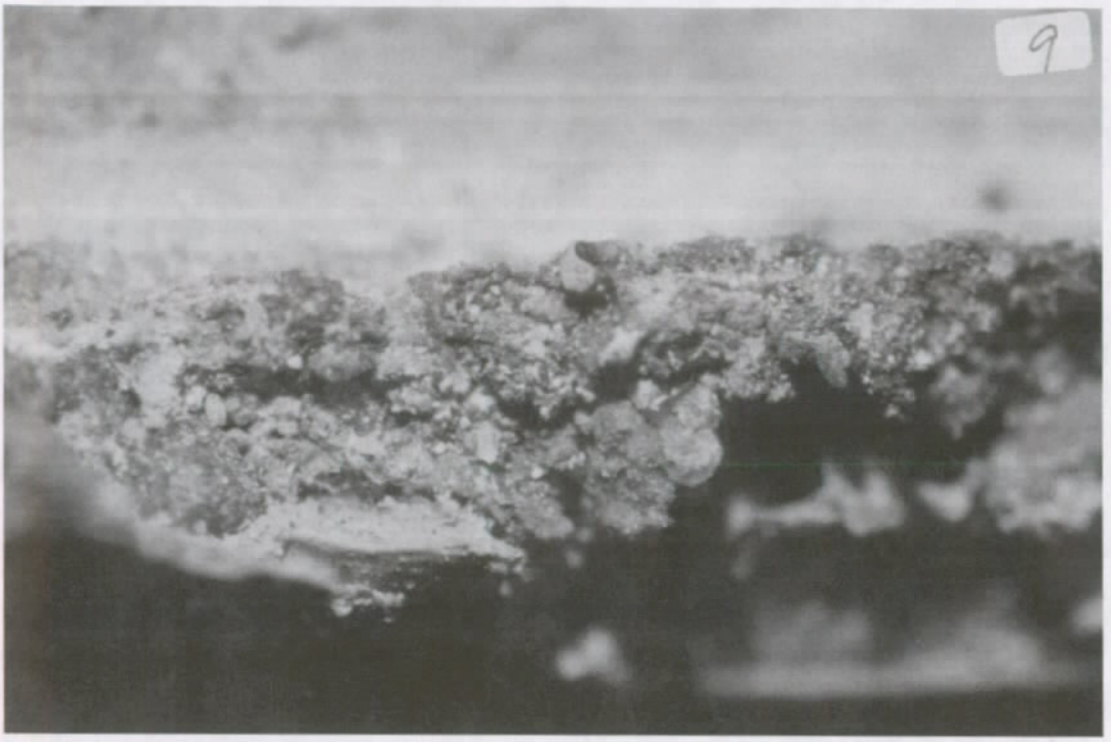


Figure 4. Photomicrograph of brown coating suggests possible sanded paint, to replicate brownstone, perhaps. The thickness, texture, and inharmonious color may be reasons why it was mostly removed.

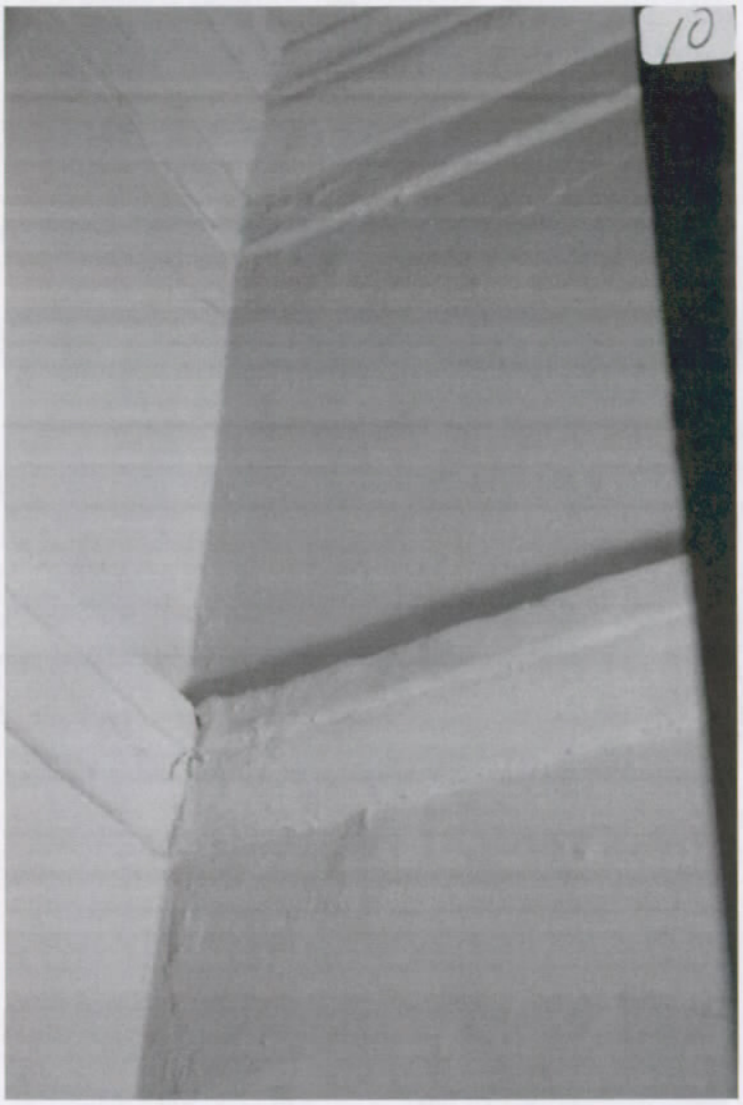


Figure 5. Poor plaster repairs of mouldings in northwest corner.

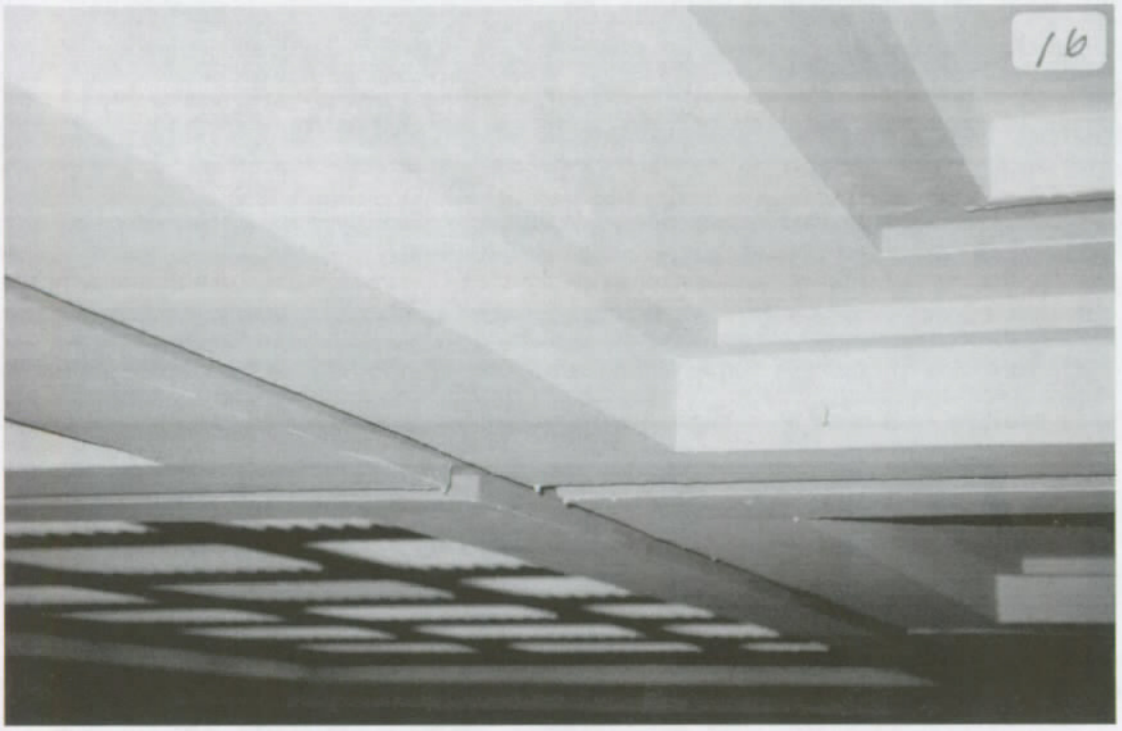


Figure 6. View across ceiling showing drips ("stalactites") of sprayed-on recent thick coating.

Figure 7. View of ceiling rosette showing drips of sprayed-on thick coating. Typical of all ceiling rosettes.

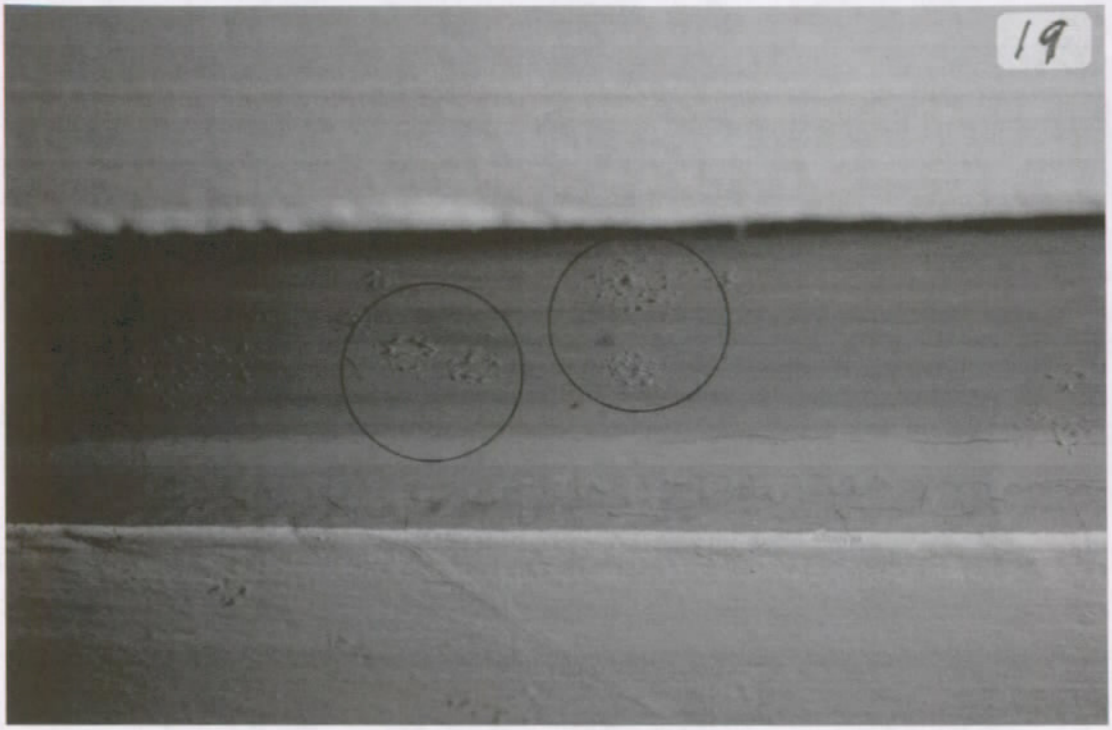


Figure 8. View of mycelia colonies on ceiling in southeast corner. Difficult to photograph.

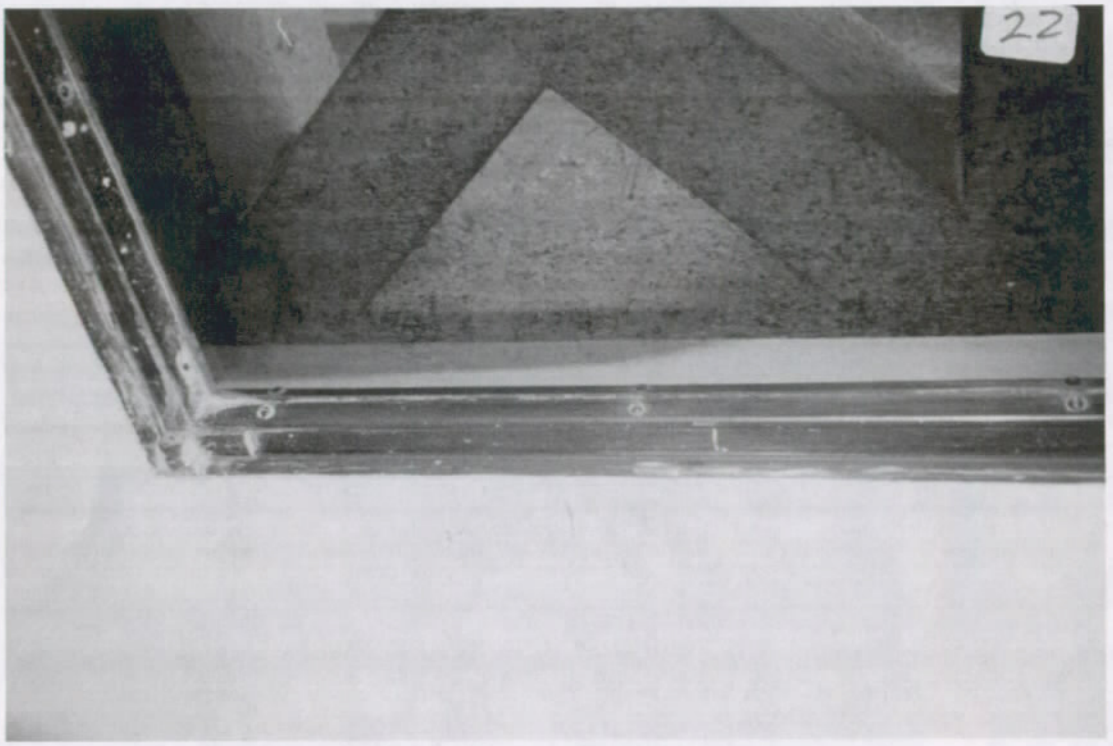


Figure 9. View of typical east/west wall window, showing bronze interior frame. Note sloppy paint work.

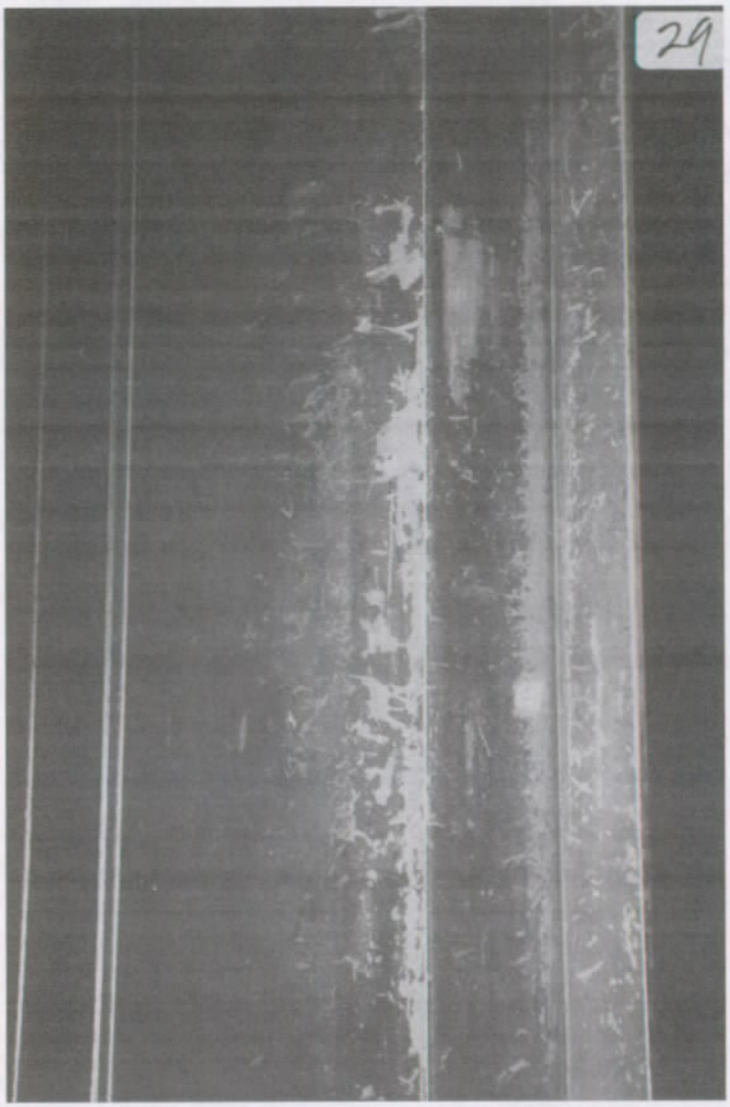


Figure 10. Severe deterioration of coatings and patina, typical on edges of all bronze doors.

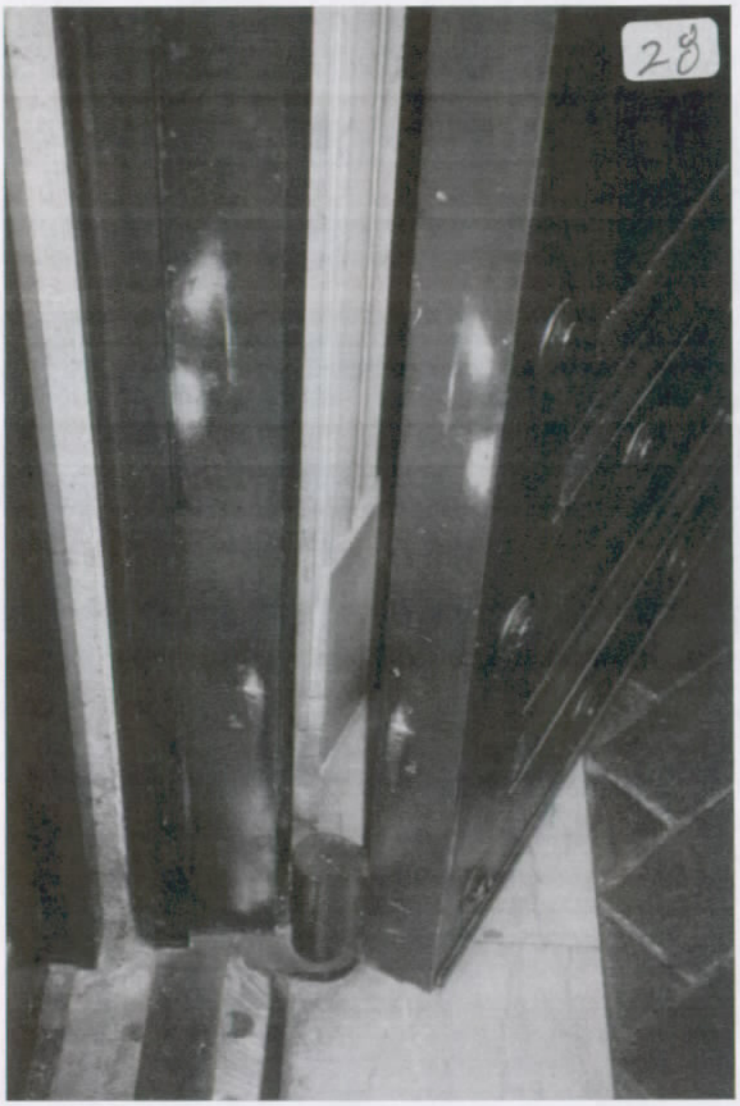


Figure 11. Unexplained damage on hinge side of south bronze door.

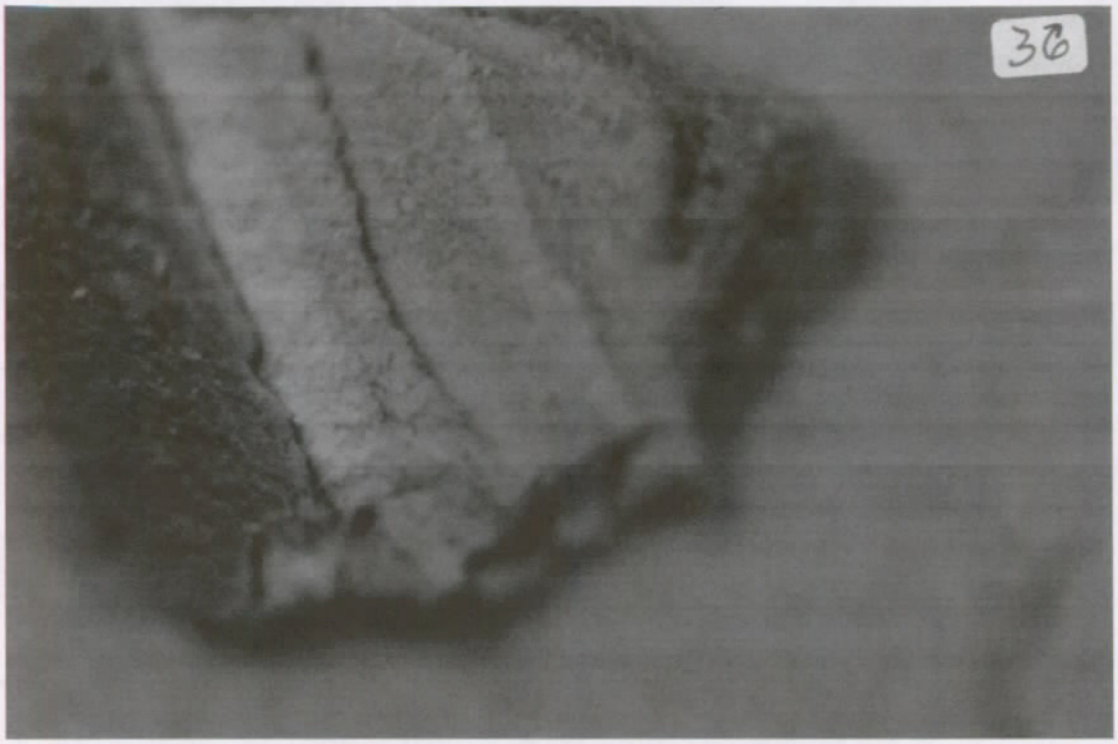


Figure 12. Photomicrograph of small cross section of paint with darkest blue showing at left. Shows thick white coating under blue, then two other blues, then pale soft rosey cream, gray, stone colors.

APPENDIX H

Material Information & Presevation

THE DODDS GRANITE COMPANY

814 PERSHING SQUARE BUILDING
1 PERSHING SQUARE
NEW YORK CITY

CHICAGO OFFICE
1334 BUILDERS' BUILDING
228 NORTH LA SALLE ST. AT WACKER DRIVE
CHICAGO, ILLINOIS

PARTIAL LIST OF

PROMINENT MEMORIAL WORK ERECTED IN STONY CREEK GRANITE

Battle Monument, West Point, N. Y. Largest monolith column in the United States. 41'-6" long, 6'-0" diameter. Shown on page 40, Modern Memorial Art.

Commemorative Monument. Sault Ste. Marie, Michigan. Fifteenth Anniversary of opening of St. Mary's Canal. Monolith shaft of Stony Creek Granite, 54'-0" long, 6'-0" square at bottom. Largest obelisk shaft in the United States. Shown on page 40, Modern Memorial Art.

Republics Monument, Jackson Park, Chicago, Illinois. Erected on site of Administration Building, World's Columbian Exposition. Henry Bacon, Architect, Daniel Chester French, Sculptor.

Gen. Wm. T. Sherman Memorial, Central Park, New York City. McKim, Mead & White, Architects, Augustus St. Gaudens, Sculptor. Shown on page 38, Modern Memorial Art.

Frederick The Great Memorial, War College Grounds, Washington, D. C. The gift of the German Emperor to the United States.

The Treaty Monument, Capitol Grounds, Jefferson City, Mo. Egerton Swartwout, Architect, Karl Bitter, Sculptor, Adolph A. Weinman, Associate.

LaFayette Monument, Prospect Park, Brooklyn, N. Y. Henry Bacon, Architect, Daniel Chester French, Sculptor.

Roosevelt Memorial, Santiago, Cuba. Henry Bacon Architect, James E. Fraser, Sculptor.

Senator George Frisbie Hoar Memorial, Front of City Hall, Worcester, Mass.

Fitchburg War Memorial, Fitchburg, Mass. Herbert Adams, Sculptor, Charles A. Platt, Architect.

Admiral George Dewey Memorial, Front of South Station, Boston, Mass.

Lincoln Memorial, Grant Park, Chicago, Illinois. McKim, Mead & White, Architects, Augustus St. Gaudens, Sculptor.

Gen. Joe Hooker Statue, front of State House, Boston, Mass

Baldwin Memorial, Spring Garden Street Parkway, Philadelphia, Pa. Founder of Baldwin Locomotive Works. Herbert Adams, Sculptor.

Greenwich, Connecticut War Memorial. Charles A. Platt, Architect.

Titanic Memorial, Washington, D. C. Mrs. Harry Payne Whitney, Sculptress.

The Honorable Tom L. Johnson Monument, Cleveland, Ohio.

Lincoln Memorial, London, England. George Grey Barnard, Sculptor.

Gen. William F. Draper Monument, Public Square, Milford, Mass. Henry Bacon, Architect. Daniel Chester French, Sculptor. Shown on page 38, Modern Memorial Art.

The Honorable Joseph Choate Monument, Salem, Mass. J. Massey Rhind, Sculptor.

Memorial Pylons, Philadelphia, Pa. Lord & Hewlett, Architects.

McKim, Mead & White, Architects.

McMillan Fountain, Washington, D. C. Herbert Adams, Sculptor.

Marcus A. Hanna Monument, Cleveland, Ohio. Prof. Herman Matzen, Sculptor.

William Cotter Maybury, Grand Circus Park, Detroit, Michigan.

The Honorable John Hay Monument, Cleveland, Ohio.

William Lloyd Garrison Monument, Boston, Mass.

Alger Fountain, Grand Circus Park, Detroit, Michigan.

Gen. Palmer Memorial, Colorado Springs, Colorado. Nathan D. Potter, Sculptor.

Mayor William Gaynor Memorial, Brooklyn Plaza of the Manhattan Bridge, Brooklyn, N. Y. Adolph A. Weinman, Sculptor.

Washington Irving Memorial, Irvington-on-the-Hudson, Charles A. Platt, Architect, Daniel Chester French, Sculptor.

Pierce Anderson Memorial, Graceland Cemetery, Chicago, Illinois. Late member of the firm of Graham, Anderson, Probst & White, Architects, Chicago, Illinois.

Phillips Brooks Memorial, North Andover, Mass. Bela Pratt, Sculptor.

Exeter, N. H. War Memorial, Henry Bacon, Architect, Daniel Chester French, Sculptor.

Eternal Light Flag Pole Pedestal, Madison Square, New York City. Carrere & Hastings, Architects. Gift of Rodman Wanamaker.

Winchester, Mass. War Memorial, Charles A. Platt, Architect, Herbert Adams, Sculptor.

White Memorial, Lakeview Cemetery, Cleveland, Ohio. Professor Herman Matzen, Sculptor. Founder of White Sewing Machine Co. and White Motor Car Company. Shown on page 10, Modern Memorial Art.

Bowman Monument, Springfield Cemetery, Springfield, Mass.

Samuel J. Tilden Memorial, 112th St. & Riverside Drive, Wilder & White, Architects, William Ordway Partridge, Sculptor.

Alexander Hamilton Memorial, front of Treasury Building, Washington, D. C. James E. Fraser, Sculptor, Henry Bacon, Architect.

Gov. Franklin Murphy Memorial, Henry Bacon, Architect, J. Massey Rhind, Sculptor. Weequahic Park, Newark, N. J.

Work Memorial. For the family of The Honorable Hubert Work, Secretary of Interior. Arlington Cemetery, Washington, D. C.

Dr. Edward Mott Moore Memorial, Father of the Park System, Rochester, N. Y. McKim, Mead & White, Architects.

Rockefeller Fountains, Tarrytown, N. Y.

Soldiers' Monument, Athens, Pa.

Sheridan Monument, Albany, N. Y.

Richmond Monument, Richmond, Virginia.

Princeton Monument, Princeton, N. J.

McKinley Memorial, Adams, Mass. Shown on page 39, Modern Memorial Art.

Warren M. Leeds Memorial, Earlham Cemetery, Richmond

Fredericksburg Monument, Fredericksburg, Pa.

Charter Oak Monument, Hartford, Conn.

Pottstown War Memorial, Pottstown, Pa.

Lincoln Memorial, Louisville, Ky. George Grey Barnard, Sculptor.

Leslie & Kather[illegible] Dodds
39 Highland St.
Hopedale, Mass., 01747

Oct. 16, 1980.

[illegible],

We are back In Mass. and have been going through some of the things here. We haven't found the negatives of the Memorial at Hodgenville in the boxes yet. they are not in the place where they are supposed to be.

In the list of negatives in the files the numbers are;

759 - Lincoln Memorial (large), Hodgenville, Ky. McKimm, Mead, and White - Archte.

763 - " " (small), " " " " " "

762 - " " (med.), " " " " " "

I suggest that yàu contact Mr. Bone at their offices in Xenia, Ohio.

Dodds Monument Co.
123 W. Main
Xenia, Ohio. 372-4408 (the codeis not on the card.)

The Memorial was built from Stony Creek Granite so we are sending a few things we found in connection with it, also a small piece of Stony Creek Granite.

We hope these are of some use to you.

Sincerely,

Leslie A. Dodds
Katherine Dodds

MILFORD PINK GRANITE

1. Name of owner --- THE DORRS GRANITE COMPANY.
   Location of Quarry --- Milford, Mass.

2. Chemical analysis of stone --- See Attached List.

3. Crushing strength --- 29,000 lbs. per cubic inch.

4. Cubic foot value of quarry blocks at quarry --- $1.10 and upwards per cubic foot.

5. Freight rate to New York City per hundred pounds --- 20¢ for rough or dressed granite not polished in carload lots. 25¢ per polished granite in carload lots. 36,000 lbs. minimum carload.

6. Area of quarry operated --- six acres. *

7. Capacity of quarry output per cubic foot per year --- 175,000 cu.ft.

8. Number of derricks operated on quarry and capacity of same --- three. (one derrick one hundred tons, one derrick seventy-five tons, and one derrick twenty-five tons.)

9. Size of cutting plant --- Milford, Mass. Plant 504 feet long and eighty feet wide. **

10. Average number of men employed --- one hundred seventy-five men.

OTHER INFORMATION THAT WILL BE OF INTEREST TO AN ARCHITECT OR OWNER:

* Total acreage, 155 acres.
This quarry produces stone in any size to the limits of transportation.

** This Cutting Plant equipped with 2 Lane Electric Cranes (one 40-ton and one 20-ton capacity), 2 Gang Saws, 2 Carborundum Machines, 3 Polishing Machines, 1 Pendulum Polishing Machine, 3 Granite Turning Lathes, 3 Granite Polishing Lathes, and 12 Surfacing Machines. Power Plant operated with hydro-electric power, 3 electric-driven air compressors in all, 2 units (2 twin Ingersoll-Sargent Compressors, capacity of each 1000 feet free air per minute, and 1 Sullivan Compressor, capacity 700 feet free air per minute). Also two steam-driven Compressors with boiler for emergency use. All Quarry derricks operated by air through an 8" air line from main Power Plant. Blacksmith shop equipped with Fitz Tool Sharpening Machine.

These Quarries formerly owned and operated by the Norcross Bros. Co. and the Milford Pink Granite Quarries Company.

SiO_2	(Silica)	76.07
Al_2O_3	(Alumina)	12.67
Fe_2O_3	(Iron sesquioxide)	2.00
FeO	(Iron oxide)	none
MgO	(Magnesia)	0.10
CaO	(Lime)	0.85
Na_2O	(Soda)	3.37
K_2O	(Potash)	4.71
S	(Sulphur)	none
MnO	(Manganese oxide)	0.05
H_2O	(Water)	none
H_2O	(Water uncombined at 110)	none
H_2O	(Ignition water comb.)	none
P_2O_5	(Phosphorous Pentoxide)	none
Absorption		negligible
Crushing Test Strength Per Cu. In.		29,000 lbs.

Lime certification

http://crs/historic/hsr/abh/pdf/lime_spec.pdf

GENLIME GROUP, L.P.
CERTIFICATION OF MATERIAL

10-5-93

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Joe Davis	From Wendy Kinter
Co. Ellen Drapki	Co. Genlime Group
Dept.	Phone #
Fax 606-259-0932	Fax 419-855-4502

JMBER:

ERAL CONTRACTOR:

UB CONTRACTOR:

e the undersigned certify that the following material supplied by us omplies with the requirements and tests of the American Society of esting Materials and cited Federal Specifications as stated below and s so guaranteed by us.

FINISH LIME

Grand Prize Finish Lime	ASTM C-206-84 (Reapproved 1992), Type N Federal Spec. SS-L-351B, TYPE F
Ivory Finish Lime	ASTM C-206-84 (Reapproved 1992), Type S Federal Spec. SS-L-351B, TYPE F ASTM C-207-91 (Reapproved 1992), Type S Federal Spec. SS-L-351B, TYPE M
Snowdrift Finish Lime	ASTM C-206-84 (Reapproved 1992), Type S Federal Spec. SS-L-351B, TYPE F ASTM C-207-91 (Reapproved 1992), Type S Federal Spec. SS-L-351B, TYPE M

MASONS LIME

Mortaseal Mason's Lime	ASTM C-207-91 (Reapproved 1992), Type S Federal Spec. SS-L-351B, TYPE M
Bondcrete Air-Entrained	ASTM C-207-91 (Reapproved 1992),Type SA Federal Spec. SS-L-351B, TYPE M

from Bill Love

By Michael J. Tate
Michael J. Tate
Director Of Technical Services

GenLime Group, L.P.
P.O. Box 158
Genoa, Ohio 43430
(800)-537-4489

My commission expires ________

1 of 1

United States Department of the Interior
NATIONAL PARK SERVICE
ABRAHAM LINCOLN BIRTHPLACE NATIONAL HISTORIC SITE
2995 LINCOLN FARM ROAD, HODGENVILLE, KENTUCKY 42748

IN REPLY REFER TO:

RECIPE FOR STAIN REMOVAL
(Memorial Building)

1 lb. oxalic acid (Quick Klean)

1 Gallon of Water

Mix with clay (preferably white clay) consistency of toothpaste.

Brush on a minimum of two coats. Let Dry. Rinse with 50 lbs. psi water pressure.

Clay from Brickyard Pottery
4721 W. 16th Street
Speedway, Indiana 46222

50 lb. bag of Clay

United States Department of the Interior FEB 20 1975

NATIONAL PARK SERVICE
SOUTHEAST REGIONAL OFFICE
3401 WHIPPLE AVENUE
ATLANTA, GEORGIA 30344

IN REPLY REFER TO:
H34-SER-PC

FEB 19 1975

Lincoln Birthplace	Init.	Date
Superintendent	AC	2/21
Admin. Assist.		
Park Ranger		
Technicians		
Maintenance		

SERO Informational

Memorandum

To: All Superintendents, Southeast Region

From: Acting Chief, Cooperative Activities Division, Southeast Region

Subject: Cleaning methods for bronze landmark plaques

We learned from Frank Ugolini that landmark owners sometimes want to know how to clean bronze plaques. If an owner asks, here's how:

1. A good scrubbing with a stiff brush and a good quality cleanser, such as can be found in grocery stores;

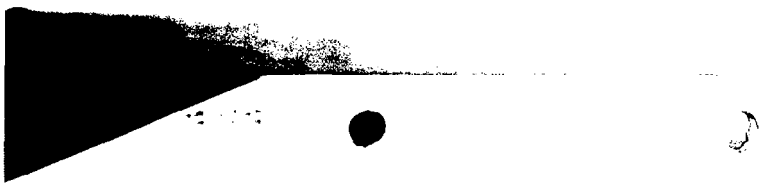
2. To brighten the bronze border and lettering use a good quality metal polish if it is needed;

3. The plaques come coated with a clear methacrylate laquer which, in time, deteriorates; scrubbing and polishing also will help remove this coating. If desired, after cleaning and polishing, apply a coat of clear laquer from an aerosal can or from a conventional paint sprayer.

The above cleaning hints come from Michaels Art Bronze Company, Box 688, Covington, Kentucky 41012. Michaels also suggests that plaques may be removed from their mountings and sent to them for a factory refinish. This includes sandblast cleaning, chemically darkening the background, and polishing the letters and borders. We suggest owners contact them for the price of a factory finish.

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!



FORMULA FOR LOG CABIN CHINKING

1 Part Granulated Salt (coarse table salt)

10 parts clay (low sand content)

Add water in amount to produce mix having the consistency of a thick mortar mix.